MUMBAI HEALTHCARE SUMMIT - 2019

3RD WORLD CONGRESS ON DRUG DISCOVERY & DEVELOPMENT - 2019

3RD WORLD CANCER CONGRESS -2019

PROGRAM AND ABSTRACT BOOK

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ARJYOPA HEALTHCARE

20th - 21st November, 2019

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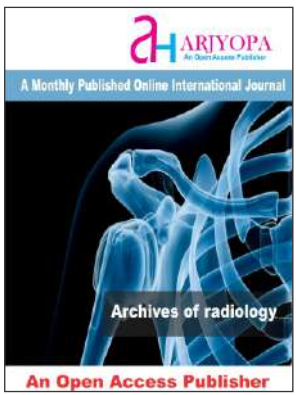

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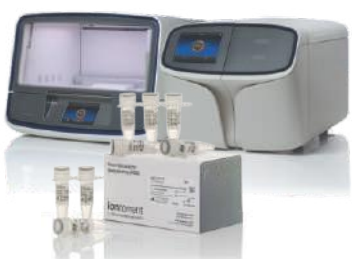

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CHAIRMAN MESSAGE

On behalf of the organizing committee, it's my immense pleasure to welcome all of you to the 3rd world cancer Congress to be held on 20th and 21st of November 2019 at Mumbai. Global cancer burden is estimated to have risen to 18.1 million new cases and 9.6 million deaths in 2018. One in 5 men and one in 6 women worldwide develop cancer during their lifetime, and one in 8 men and one in 11 women die from the disease. Worldwide, the total number of people who are alive within 5 years of a cancer diagnosis, called the 5-year prevalence, is estimated to be 43.8 million. Even in India the incidence is expected to increase from the current approximately 1.2 million new cancer patients to practically 2 million new cancer patients per year within next 5-7 years.

This increasing cancer burden is due to several factors from unhealthy food habits to population explosion and ageing as well as the changing prevalence of certain causes of cancer linked to social and economic development. This is particularly true in rapidly growing economies, where a shift is observed from cancers related to poverty and infections to cancers associated with lifestyles more typical of industrialized countries.

If the treacherous enemy like Cancer changes tactics we have to rise to the challenge and to combat cancer. From the era of increasing aggression with stronger chemotherapy and more major surgery, we have now graduated to the era of precision medicine when the mantra has changed from “One Size fits all” to “Individualization of treatments” - the era of precision medicine. Precision in diagnosis, therapy and prognostication has become the need of the society. The focus area of this meeting is: “Cancer in a New Way: Innovation, Prevention, Diagnosis and Cure” with special emphasis on drug discovery and development.

Purpose of this conference is to instill the research mode and thinking methodology In young investigators and students and to build a bridge between them and established academic, industry and business leaders to address challenges and opportunities.

We welcome you all to Mumbai - the City that never sleeps, and we hope you will enjoy this scientific feast and take full advantage of the spread of knowledge.

With Warm Regards,

Padmashri Dr. R. K. Deshpande

Executive Chairman

Asian Cancer Institute

CONVENOR MESSAGE

Dear Colleagues,

On behalf of the Arjyopa Healthcare and Organizing committee, it is our pleasure to invite all of the great Scientists, Academicians, Young Researchers, Business Delegates and Students from all over the world to attend the Mumbai Healthcare Summit – 2019 from 20th – 21st November, 2019 at Royal Orchid Central Grazia, Mumbai, India.

First of all we would like to thank all the delegates coming from different part of the globe to attend this prestigious conference. We would like to thank all the organizing committee members for their extensive support and hard work in making this conference a successful one. Further, we would also like to thank all the sponsors for supporting the conference because of which we were able to cut down the registration fees.

We expect thousands of worldwide cancer and health experts to converge to our capital city in September 2019, and take advantage of this major educational platform to further 'Strengthen. Inspire. Deliver' the global cancer control momentum. We are also hopeful that through the Congress our community in Asia will be able to increase awareness about the growing cancer burden that affects our region and strengthen its ties to further tackle the disease. Studies estimate that 8.1 million people in Asia will die of cancer by 2020 - 75% of which will be unable to face the huge medical care costs within their first year of diagnosis.

We're looking forward to an excellent meeting with great scientists from different countries around the world and sharing new and exciting results in cancer research and drug development.

With Warm Regards,

Partha J. Das

Executive Chairman
Arjyopa Healthcare

Aruna Das

Director & CEO
Arjyopa Healthcare

KEYNOTE SPEAKERS

Padma Bhushan Dr. Suresh H. Advani
Senior Oncologist
Jaslok Hospital

Dr. Jagdeesh Kulkarni
Director
Asian Cancer Institute

Dr. Deepak Parikh
Executive Chairman
Asian Cancer Institute

INDUSTRY SPEAKERS

Dr. Raj Nagarkar
Senior Surgical Oncologist

Dr. Rajiv Tangri
Head, Histopathology and Cytopathology
Dr. Lal Pathlabs Ltd.

Dr Atul Thatai
Head, Molecular Diagnostics and R&D
Dr. Lal PathLabs Ltd.

PLENARY/INVITED SPEAKER ABSTRACTS

ARJYOPA JOURNALS

SESSION I: PLENARY SESSION

Plenary Talk: PSS02

Mechanisms of Enhancement of Topotecan Cytotoxicity by Ascorbic Acid in Human Breast MCF-7 Tumor Cells.

Presenting Author: Dr. Birandra K. Sinha
National Cancer Institute at National Institute of Environmental Health Sciences, USA

Topotecan is an important anticancer drug for the treatment of various human malignancies. While the principal mechanism of tumor cell killing by topotecan is due to its interactions with topoisomerase I and formation of DNA double-strand breaks, recent studies suggest that mechanisms involving generation of reactive free radicals and induction of oxidative stress may also play an important role in topotecan-dependent tumor cell death. Recently, we found that topotecan generates a topotecan radical following one-electron oxidation by a peroxidase-hydrogen peroxide system. Ascorbic acid, which produces hydrogen peroxide in tumor cells, significantly enhanced topotecan cytotoxicity in human breast MCF-7 tumor cells. Ascorbic acid also increased topoisomerase I-dependent topotecan-induced single- and double-strand DNA breaks. To further understand and evaluate the role (s) of free radicals and oxidative stress in topotecan cytotoxicity we examined the effects of topotecan short (1h) and long (24h) exposure on global gene expression patterns using gene expression microarray analysis in MCF-7 tumor cells. We found that topotecan treatment significantly down-regulated estrogen receptor alpha (ERα/ESR1) and antiapoptotic BCL2 genes in addition to many other p53-regulated genes. More importantly, 8-oxoguanine DNA glycosylase (OGG1), ferredoxin reductase (FDXR), methionine sulfoxide reductase (MSR), glutathione peroxidases (GPx), and glutathione reductase (GSR) genes were differentially expressed by topotecan treatment. The involvement of reactive oxygen free radical sensor genes, the oxidative DNA damage (OGG1) repair gene and induction of pro-apoptotic genes suggest that reactive free radical species also play a role in topotecan-induced tumor cell death.

Plenary Talk: PSS03

A Case Report of Treatment of Post-Operative Breast Cancer with Immunotherapy

Presenting Author: Dr. Tarang Krishna
Director, Dr Krishna's Cancer Healer Center, New Delhi, India

Breast cancer is one of the most common cancers in women. World Health Organization estimated the number of diagnosed breast cancer cases at approximately 2.1 million in 2018. This equals to about 11.6% of the total cancer incidence burden. Globally, the incidence rates of breast cancer are much higher as compared to other cancers. Such high prevalence of breast cancer calls for an effective treatment that is able to resolve the condition permanently. Although the best form of resolution is early diagnosis but an assured treatment should be sought as most of the cases get detected in advanced stages. Most of the patients undergo surgery which is coupled with either adjuvant or neoadjuvant chemotherapy and in some cases radiotherapy. The potential side effects of chemotherapy and radiotherapy make them a non viable option. The treatments of hormone therapy and targeted therapy are also not devoid of side effects. The treatment should be such, which relieves the ailment of the patient rather than augmenting it. This case report is of a 46 year old female, who underwent lumpectomy but the disease relapsed after a few months. Since the disease was still persisting, the patient opted for immunotherapy treatment at Cancer Healer Center where she was administered oral medication and her condition was evaluated continuously. After a continuous treatment for about 4 months, the PET CT scan reports confirmed the complete regression of the disease. Presently, the patient is free from illness and is leading a normal life.

Plenary Talk: PSS04

The Outcome of Indian Consensus Guideline on Biomarker Testing in NSCLC

Presenting Author: Dr. Kumar Prabhash
Dept of Medical Oncology, Tata Memorial Hospital, Mumbai, India

Novel molecular targets and promising targeted therapies have reshaped diagnostics in patients with advanced non-small cell lung cancer (NSCLC). Despite this progress, the implementation of molecular screening to identify predictive biomarkers in Indian clinical and pathology settings has been challenging due to operational and logistical constraints. This consensus guideline brings together medical oncologists, molecular pathologists and pathologists from India to provide a quick and competent reference for biomarker testing in NSCLC. The guideline summarizes the importance of targetable mutations in NSCLC such as epidermal growth factor receptor (EGFR), rearrangements in anaplastic lymphoma kinase and receptor tyrosine kinase encoded by ROS-1 gene, overexpression of programmed cell death ligand-1 and resistant EGFR mutations. It reaffirms recommendations from international working groups, discusses vulnerable pre-analytical procedures and provides a balanced review on the pros and cons of different diagnostic tests (immunohistochemistry, fluorescence in situ hybridization, polymerase chain reaction-based testing and next-generation sequencing). The document also provides an algorithm to aid diagnostic decision-making and a checklist to assess the quality of testing laboratories that will help the medical oncologists make an informed choice. Overall, these recommendations are based on evidence and clinical experience and will aid policymakers, oncologists, health care practitioners and pathologists who strive to implement molecular strategies and make informed decisions for improved care in NSCLC in India.

Plenary Talk: PSS05

Sonography of the Neoplastic Diseases in the Gastro-Intestinal Tract

Presenting Author: Dr. Vikas Leelavati Balasaheb Jadhav
Dr. D. Y. Patil University, Pune, Maharashtra, India

Sonography of the Gastro-Intestinal Tract can reveal intra-mural tumours, Intra-mural haematoma, Lesions of Ampulla of Vater like benign & infiltrating mass lesions. Neoplastic lesion is usually a segment involvement, & shows irregularly thickened, hypoechoic & aperistaltic wall with loss of normal layering pattern. It is usually a solitary stricture & has eccentric irregular luminal narrowing. It shows loss of normal Gut Signature. Enlargement of the involved segment seen. Shouldering effect at the ends of stricture is most common feature. Enlarged lymphnodes around may be seen. Primary arising from wall itself & secondary are invasion from peri-Ampullary malignancy or distant metastasis. All these cases are compared & proved with gold standards like surgery & endoscopy. Some extra efforts taken during all routine or emergent ultrasonography examinations can be an effective non-invasive method to diagnose primarily hitherto unsuspected benign & malignant Gastro-Intestinal Tract lesions, so should be the investigation of choice.

Plenary Talk: PSS06

Resilience in Patients with Hematological Malignancy in Different Phases of Their Disease: A Longitudinal Study

Presenting Author: Dr. Wen-Xiang Chen
Hualien Tzu Chi Medical Center, Taiwan

Background: Hematological cancers, which can be subdivided into leukemia, lymphoma, and multiple myeloma, cover a wide range of diseases from the most acute to slow-growing chronic malignancies. The treatment regimens for these diseases are often lengthy, aggressive and urgent, and probably include high-dose chemotherapy or hematopoietic stem cell transplants. During the treatments of hematological malignancies, patients experience psychological distress for the fear of uncertainty, and these problems always continue to exist when the disease is in remission. Although theories conflict about how to objectively measure it, they consistently suggest that individual resilience enables patients to harness the resources needed to maintain well-being during and after cancer therapy, to move beyond their experience with hope and insight, and to better adapt to future adversity.
Purpose: Resilience is an individual's ability to maintain physical and emotional well-being in the face of adversity. this study explored associations between patient-reported resilience, religious and mental health.
Methods: This is a longitudinal study used a questionnaire data collection were
Religious Attitude Scale (RAS), Herth Hope Index (HHI), Hospital Anxiety and Depression Scale (HADS), and Connor-Davidson Resilience Scale (CDRS). A total of 55 Hematological cancers who were involved in their after bone marrow biopsy (T1); initial disease diagnosis (T2); accepted chemotherapy (T3); and hematopoietic stem cell transplantation (T4).
Results: This study major findings of the religious, mental health, and resilience variables showed significant changes over time ($p < 0.05$). The significant change of depression over time was found only after disease diagnosis. The highest anxiety and depression scores were found at T2. As to the resilience and hope, the scores at T4 were highest. The religious attitude at the first clinic visit contributed to the change in resilience over time ($b = 1.4382$, $p < 0.01$).

SESSION II: ORGAN DEFINED CANCER

Invited Talk: ODC01

Deregulation of Micrornas and Transcription Factors by Paracrine Signals from the Microenvironment Drives Ovarian Cancer Metastatic Colonization

Presenting Author: Dr. Anirban K Mitra
Dept. of Medical and Molecular Genetics, Indiana University School of Medicine, Indiana

Ovarian cancer is the most lethal of all gynecologic malignancies and has witnessed minimal improvements in patient outcomes in the past 3 decades. 70% of ovarian cancer patients present with disseminated disease at the time of diagnosis. The standard of care remains a combination of debulking surgery and platinum and taxanes based cytotoxic chemotherapy. Even though metastasis is the leading cause of ovarian cancer related fatalities, our understanding of the process remains limited. Ovarian cancer has a unique pattern of metastasis where the hematogenous spread is less common. Ovarian cancer cells mainly metastasize within the peritoneal cavity, which involves exfoliation from the primary tumor, survival and transport in the peritoneal fluid followed by metastatic colonization of the organs within the peritoneal cavity. A key and rate limiting step for successful metastasis is their attachment and productive paracrine/juxtacrine interactions with the mesothelial cells covering the metastatic organs for the establishment of metastatic tumors. Using an organotypic 3D culture model of the human omentum, recapitulating the early events of metastasis, we identified key transcription factors and microRNAs that are deregulated in the metastasizing OC cells as a result of the cross-talk with the microenvironment. Specific paracrine signals from the mesothelium were involved in the activation of MAP kinase signaling in the cancer cells, which resulted in the activation of the oncogenic transcription factor ETS1 and also the downregulation of the tumor suppressor microRNA, miR-193b through DNMT1 mediated promoter hypermethylation. Focal adhesion kinase and urokinase were identified as the functional targets of ETS1 and miR-193b respectively, which were responsible for increased metastatic colonization. The findings were confirmed in patient cohorts and mouse models of ovarian cancer metastasis.

Invited Talk: ODC02

Interference Of Stop Codon Regulate the Structural and Functional Activity Of TGFβR1 Gene In the Cases Of Wilim's Tumour

Presenting Author: Dr. Ajit K Saxena
Dept. of Pathology / Lab Medicine,All India Institute of Medical Sciences, Patna, India

Transforming growth factor beta receptors type-1 (TGF-βR1) are involved in cellular signalling pathway and their mutational changes encoded amino acids involved in protein structure and functions has not been defined clearly. Therefore, the present study has been designed to evaluate the frequency of TGF-βR1 gene mutation, copy number variation(CNV) and DNA sequencing for nucleotide changes. This study will further help for structural and functional aspects after prediction of 3D protein model for ligand binding sites. Clinically diagnosed cases of Wilm's tumour were used for genetic studies using RT-PCR for determine the frequency of gene mutations, CNVs and changes in nucleotide were observed by DNA sequencing . Frequency of TGF-βR1 gene mutation was 18.18% observed in WT cases with respect to controls. Similarly, the *Tm* value (mean) was 90.70 shifted to 91.0 showing significant differences (p=0.24) and C.I. at 95% varying between 2.09-7.09 with copy number variations showing S.D =0.37 and C.I. at 95% 0.337- 0.906. Sequencing data reveals the appearance of two nucleotide sequences TGA→TCA and TGA→CCC, which translates amino acid serine and proline, respectively and consider as “stop codon”. These mutations were further identified as Insertion/Deletions during prediction of protein helical structure for the ligand binding sites to develop new molecules for cancer therapeutics based on pharmacogenomics.

Invited Talk: ODC03

Integrin alfa5beta1- In Breast Cancer Biology

Presenting Author: Prof. Amitava Chatterjee
Ramakrishna Mission Vivekananda Educational & Research Institute Narendrapur, Kolkata- 700103, India

Integrin alfa5beta1 is a well studied integrin to have a potential role in cell biology especially in cancer biology. This integrin also has been found to be a regulator of MMP-2 which is situated in a pivotal position of cell migration and cancer biology. The interaction of this integrin with its ligand, fibronectin creats a signaling cascade which controls many important steps in cancer.

Invited Talk: ODC05

Development and Validation of the Liver Cancer Scale among the System of Quality of Life Instruments for Cancer Patients (QLICP-LI) Based on Classical Test Theory and Generalizability Theory

Presenting Author: Dr. Chonghua Wan
School of Humanities and Management, Guangdong Medical University, Dongguan 523808, China

Background: Quality of life (QOL) for patients with liver cancer is of interest worldwide and disease-specific instruments are needed for clinical research and practice. This paper focus on the development and validation of the liver cancer scale under the system of Quality of Life Instruments for Cancer Patients (QLICP-LI(V2.0)) by the modular approach and both classical test theory and Generalizability Theory.
Methods: The QLICP-LI(V2.0) was developed based on programmed decision procedures including multiple nominal and focus group discussions, in-depth interviews and quantitative statistical procedures. Based on the data measuring QOL three times before and after treatments from 114 inpatients with liver cancer, the psychometric properties of the scale were evaluated with respect to validity, reliability and responsiveness employing correlation analysis, multi-trait scaling analysis, factor analyses, t-tests and also G studies and D studies of Generalizability Theory analysis.
Results: Correlation, multi-trait scaling and factor analyses confirmed good construct validity and criterion-related validity when using FACT-Hep as a criterion. The internal consistency α for all domains were higher than 0.70 (0.71-0.92). Test-retest reliability coefficients (Pearson r and Intra-class correlations ICC) for the overall score and all domains were higher than 0.80 (0.84-0.97). The overall score and scores for physical domain and social domain had statistically significant changes ($P<0.01$) after treatments with SRMs ranging from 0.43 to 0.78, but psychological domain, the specific module, common symptoms and side effect domain were not statistically significant compared to that of the pre-treatments. G-coefficients and index of dependability (Φ coefficients) confirmed the reliability of the scale further with more exact variance components, and decision information on number of items changing.

Invited Talk: ODC06

Development and Validation of the System of Quality of Life Instruments for Cancer Patients: Leukemia(QLICP-LE)

Presenting Author: Dr. Jianfeng Tan
School of Humanities and Management, Guangdong Medical University, Dongguan - 523808, China

Purpose: To develop and validate a quality of life (QOL) instrument for cancer patients with Leukemia, QLICP-LE, which is one of the system of QOL instruments for cancer patients in China.
Methods: Using the programmed decision methods of instrument development, the quality of life instrument for cancer patients with Leukemia,(QLICP-LE) with considering Chinese cultural background was developed, and evaluated on the data from 101 inpatients of Leukemia. The statistical methods used in this research included statistical description, Pearson correlation, factor analysis, and paired t test.
Results: The test–retest reliability for the overall scale and five domains are all above 0.88 .The internal consistency α for each domain is higher than0.66 except sideeffect domain(0.56). Most correlation coefficients between each item and it's domain are above 0.57. The scores differences between pre-treatment and post-treatment for overall scale, physical domain, psychological domain, social domain, side effect domain and specific module have statistical significance.

SESSION III: BIOMARKERS AND NOVEL THERAPEUTICS

Invited Talk: BNT01

CAR-T Cell Immunotherapy: New Avenue for Cure of Metastatic Cancer

Presenting Author: Dr. Pravin D. Potdar,
Dept. of Genetics & Stem Cell, Dr. A.P. J. Abdul Kalam Educational and Research Centre, Mumbai, India.

Cancer is one of the most common leading cause of cancer death in men and women in the World. Most of these cancers are diagnosed at the last stage and therefore clinicians find difficulty in giving treatment to these patients which resulted in a high mortality rate. Radiation therapy or chemotherapy are major treatment. However, due to severe side effects, most of the cancer patients are stumbled to death in a short duration of these therapies. Several times it has been seen that doctor have no alternative to leave cancer patients without any treatment. Therefore, there is an urgent need for some alternative innovative technology which can fight against this dreadful cancer at the metastatic stage. The recent development in innovative technologies in the field of Genomic, Proteomic, Stem Cell research and Bioinformatics, this may be possible to develop various diagnostics and therapeutic solutions to solve these problems. Immunotherapy is one of the innovative therapy which can help clinicians to treat metastatic cancer based on improving cancer patient's own body immune system to kill cancer cells. Chimeric Antigen Receptor - T (CAR -T) cell therapy is one of the promising therapy, where immune T cells are modified in the lab in such a way that they can destroy cancer cell alone leaving normal cells intact. CAR-T cell therapy works on the principle that Immune T-cells have their own protein receptor that attaches to cancer cell antigen and helps to trigger other parts of the immune system to destroy these cancer cells of the cancer patient. Therefore making CAR-T cells will be a great challenge to all scientists all over the world. Making CAR-T cells required a patient's own T cells which are modified in vitro and resulting CAR-T cells can be used for immunotherapy of cancer. This paper presentation will highlight all recent development in CAR-T cell therapy in Leukaemia's /lymphomas as well as in solid tumours. It will also review the important factors involved in making CAR-T cells in the laboratory and it's used in immunotherapy of cancer. This will be a novel treatment to treat metastatic cancer patients in the near future.

Invited Talk: BNT02

Carcinoma of Scrotum a Rare Entity with Review

Presenting Author: Dr. Deepak M. Kamle
Dept. of Surgury, Wanless Hospital MIraj, Miraj, India

A 40 years man presented to our Department of General Surgery out patient with history of swelling over scrotum for six months, Faul smelling discharge from Lesion 4 months. PT had noted a small 1X1cms swelling left scrotal region which slowly enlarged in size and shape which did not responded to the treatment of Local practitioners. There was no history of Fever/sexually transmitted disease/ High risk behaviors. Occupational history reveals that he was working near Furnace in Bakery for 10 years. Examination revealed an ulcer proliferative lesion of 4X5 cm lesion over left scrotum. The margins were not tender, Everted. There was no associated lymphadenopathy. The wedge Biopsy recealed squamous cell carcinoma well differentiated. Abdomen USG and CT Abdomen Pelvis don't reveal any metastasis.The patient underwent a wide excision of 2cms with primary closure of wound under Spinal anesthesia. The histopathology was reported as well differentiated squamous cell carcinoma with involvement of Epididymis so after obtaining consent of patient (Initially pt did not give consent for orchiectomy/Epididectomy) A left Epididectomy with left Orchiectomy with Hemiscrotectomy was done , Post operatively patient was given Radiotherapy and Chemotherapy. Post-operative pt has uneventful recovery and doing very well.Review of literature shows the overall incidence rate around 1.3per 10000000 person years. This is a curable diseases provided diagnosed earlier and treated efficiently .

Invited Talk: BNT03

P16 Promoter Methylation, Expression, and Its Association With ER+Ve, PR+Ve And HER2+Ve Subtype of Breast Carcinoma

Presenting Author: Dr. Suresh T. Hedau
Division of Molecular Oncology, National Institute of Cancer Prevention and Research, Noida - 201301, UP

Aim: The purpose of the study is to investigate p16 protein expression and promoter methylation of p16 gene and their association with molecular subtypes based on parameter such as estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth factor receptor 2 (HER2).
Methods: A total of 114 breast cancer tissue biopsies were collected for methylation-specific polymerase chain reaction (MSP) and immunohistochemical (IHC) analysis.
Results: Seven tissue microarrays were constructed. p16 protein expression was studied in 114 cases, of which 35/114 (30.7%) cases showed strong expression and the majority of them had ER-positive tumor (57.6%), and it was statistically significant ($P < 0.0074$). Similarly, p16 expression was reduced in the majority of PR-negative tumors (83.9%) and the association was statistically significant ($P = 0.0026$). p16 methylation was studied in 114 cases and was positive in 71.0% cases.

Invited Talk: BNT04

Novel Cancer Biomarkers (NCB): A New Paradigm for Non-Invasive & Early Diagnostics of Cervical Cancer

Presenting Author: Dr. Monika Sachdev
Division of Endocrinology, Central Drug Research Institute, Lucknow, India

Background: Cervical cancer has become the fourth most common cancer among women worldwide, in India cervical cancer stands as second among cancer in women (aged 15– 44 years) after breast cancer accounting for almost 14% of all female cancer cases. Cervical cancer is a worldwide medical problem, but its diagnosis requires the identification of early neoplastic changes through non-invasive methods. Our research focuses on a new concept of cervical cancer diagnosis, where precancerous lesions are detected through the expression of novel cancer biomarkers (NCB) in cervico-vaginal smears as well as in urine samples. Existence of these antigens as well as their antibodies was also observed in patients' sera samples at various stages of cervical cancer.
Methods: mRNA expression of these NCBs was examined in biopsy and Liquid Based Cytology (LBC) specimen through PCR. Immunolocalization was implemented simultaneously to observe the precise location of these antigens on biopsy tissue sections along with cervico vaginal smears. Western blotting was explored to check the appearance of these antigens in the patients' sera as well as urine samples. Furthermore antibodies specific to these NCBs were analyzed in patient's sera through ELISA.
Results: Identified cancer biomarkers were first detected in biopsy tissues of the cervical cancer patients. Further these markers were found to be positive in cervico-vaginal smear as well as in urine samples of these patients even at early CIN stages. At the same time, antibodies against these cancer biomarkers were also detected in patient's sera. Finally, these proteins were identified as novel non invasive biomarkers in cervical cancer at early stages and also seem to be promising target for immunotherapy.

Invited Talk: BNT05

Cd10: A Novel Biomarker In Oral Epithelial Dysplasia and Oral Squamous Cell Carcinoma

Presenting Author: Dr. Sangeeta R Patankar
Dept. of Oral and Maxillofacial Pathology, YMT Dental College, Kharghar, India

Background: A series of epithelial lesions of the oral cavity which undergo malignant transformation are histologically characterized by varying grades of epithelial dysplasia. Early diagnosis and timely intervention may help in prevention and reduction of morbidity and mortality of oral sqauamous cell carcinoma (OSCC). Immunohistochemistry is important in diagnosis and determining the cell of origin of oral tumours. CD10 is a zinc-dependent metalloendoprotease that can cleave signaling peptides. CD10 is expressed in various normal cell types, and is an essential tissue stem cell marker of the bone marrow, adipose tissue, lungs and breasts. It is also expressed in some types of cancers, such as those of kidney, liver, skin, cervix, prostate, lung, breast, pancreas, stomach, and bladder. Role of CD10 in the prognosis and behaviour of Oral epithelial dysplasia and OSCC is relatively unknown. Hence the present study has been conducted to evaluate the stromal expression and invasive potential of CD10 in oral epithelial dysplasia and various grades of OSCC.

Methodology: A total of 65 histologically diagnosed cases comprising of normal oral mucosa (n=5), oral epithelial dysplasia (n=15), microinvasive SCC (n=15), well differentiated SCC (n=15) and moderately differentiated SCC (n=15) were included in the present study. All these cases were evaluated using monoclonal antibody CD10. Obtained data was subjected to appropriate statistical analysis.

Results: All cases showed immunopositivity for CD10 in stromal cells only. Results indicated that CD10 immunopositivity increases as the disease progresses from oral epithelial dysplasia through varying grades of squamous cell carcinoma.

SESSION IV: CANCER DIAGNOSTICS: FROM CUTTING EDGE TO DAILY REALITY

Invited Talk: CDS01

Expanding Indications of Implants in Breast Reconstruction

Presenting Author: Dr. Garima Daga
Consultant Surgical Oncology, RGCI & RC, New Delhi, India

Introduction: As flap reconstruction carries some potential downsides, the indications to use Implants in Breast reconstruction have expanded recently with comparable outcomes. We present our spectrum of use of Implants in breast reconstruction.
Material and methods: A prospective study is being undertaken to know the range of indications and outcomes of use of Implants in breast reconstruction starting from June 2017.
Results: Total 31 patients underwent the Implant reconstruction. Patient age ranged from 25 to 60 years. Common indications included nipple and skin sparing mastectomies in extensive DCIS and multicentric invasive carcinomas, partial mastectomies, radiation fibrosis and risk reduction mastectomies. Mean operative time was 45 + 7 minutes. Median hospital stay was 3 days. Two (6.45%) patients had complications leading to loss of implant. Total follow up till now is 761 days.

Invited Talk: CDS02

Fluorescence Guided Breast Conserving Surgery: A Novel Technique

Presenting Author: Dr. Chitresh Kumar
Dept. of Surgical Oncology, All India Institute of Medical Sciences, New Delhi, India

Introduction: Breast cancer has ranked number one cancer among Indian females with age adjusted rate as high as 25.8 per 100,000 women and mortality 12.7 per 100,000 women. In year 2018, 1,62,468 new cases of breast cancer diagnosed in India. Out of which approximately 1/3 cases were early breast cancer. Surgery is the cornerstone of early breast cancer management. Breast conserving surgery (BCS) is the standard surgical care and modified radical mastectomy should be avoided as it is a morbid procedure and associated with complications like bleeding, flap necrosis, surgical site infection and lymphedema.
Problem statement: Palpation guided BCS is associated with tumor involved margins in up to 41% of cases. Due to fear of positive margins and need of second surgery, more than 80% of the early breast cancer patients eligible for BCS are undergoing mastectomies. The intra-op ultrasound guidance and frozen section biopsy resulted in a significant reduction in margin positivity but in resource limited setups these are not readily available. Other recent techniques like Margin Probe, ClearEdge, Intelligent knife seem to be promising but these are very costly.
Methodology: Research Hypothesis: Intravenous Fluorescein achieves high concentration in tumor tissue due to increased capillary permeability which can be detected by blue light (480 nm).**Primary Objective:** To evaluate the effectiveness (negative predictive value) of fluorescence guided identification of tumor free margins during breast conserving surgery.**Study design:** Prospective cohort study.**Setting:** Surgical wards and Outpatient clinics of Department of Surgery, All India Institute of Medical Sciences, New Delhi (Tertiary care teaching hospital in North India).**Study population:** A total of 80 patients with T1–T2 invasive breast cancer undergoing breast conserving surgery between March, 2016 to Feb, 2019 were included after a written consent.**Exclusion criteria:** Previous open biopsy, extensive micro-calcification and multiple tumors.
Results: Mean age of the patients was 54.2 (SD=8.4) years. Sixteen patients (20.0 %) had T1 tumors while 64 patients (80%) had T2 tumors. Axillary nodes were involved in 25 patients (31.2%) and all underwent axillary node dissection. Ten patients (12.5%) received chemotherapy to downsize the tumor size before breast conserving surgery. All the tumors were invasive ductal carcinoma, 95% (76/80) were NOS types.Twenty four patients (30%) had triple negative breast cancers.None of the patient had adverse drug reactions during surgery or complications in early pos-op period. Mean size of tumor on histopathology was 3.2 (SD=1.4) cm. In 78 (97.5%) patients non-fluorescent margins were found to be tumor free while only in 02 (2.5%) patients non-fluorescent margins were found to be involved by tumor on final histopathology.

Invited Talk: CDS03

Risk Prediction Models for Oral Cancer: A Systematic Review

Presenting Author: Dr. Monica M
Professor, Dept. of Public Health Dentistry, Sri Sai College of Dental Surgery, Vikarabad

Prediction is omnipresent in cancer care. Countless decisions have to be made at every stage of the disease by the patient, doctor and the family members. Statistical prediction models have been in vogue in the recent past to provide a quantitative estimate of the risk of a specific event for a particular individual. A cancer-specific risk assessment model uses epidemiological, clinical, biological, and hereditary factors such as inherited mutations, along with certain human activities such as diet, smoking, and physical activity, to quantify the probability of cancer occurring within a specified time period. Oral cancer is the fourth most common cancer in India and affects almost 3,00000 people worldwide in a year. High prevalence of risk factors like tobacco usage in the south east Asian region is responsible for its high prevalence. Oral cancer is one of the rare types of cancers which has a premalignant stage and so, can be detected easily in the oral cavity. Early detection of this lesion can lead to improved outcomes and a good quality of life. In spite of having a premalignant stage, diagnostic delay leads to most of the patients reaching an advanced stage of the disease. Poor attitudes towards oral health and poor accessibility especially in rural areas is responsible for these diagnostic delays. Risk scores or prediction algorithms using advanced statistical techniques have been developed to identify people at high risk of developing oral cancer. These risk assessment models could help in targeted screening of certain people and thereby help in early detection of the disease which could in turn lead to improved outcomes and changes in their lifestyle. With more and more evidence gathering about the emerging risk factors of oral cancer, novel risk models are being developed and tested. But the feasibility of application of these models in clinical practice for an individual patient is questionable. A comprehensive analysis of all these models related to oral cancer could help in identifying the best model amongst the existing risk models. A clear and concise comparison between various models will help identify and evaluate the one risk model which can be implemented readily in clinical practice and also utilized by primary care physicians. This paper aims to provide a better understanding of the strengths and limitations of various risk prediction models of oral cancer, compare the existing models and identify the model with the best performance measures, which might in turn lead to identification of people at high risk and thus lead to better disease management.

Invited Talk: CDS04

Synergizing Human Papillomavirus with Mitochondrial Dna Copy Number in Oral Premalignant Lesions and Oral Squamous Cell Carcinoma

Presenting Author: Dr. Reema Raina
Dept. of Health Research, Indian Council of Medical Research (ICMR), Noida, India

Objective: The present study has been designed to understand the relative mtDNA copy number variations and HPV status in oral potentially malignant disorders (OPMDs) and oral squamous cell carcinoma (OSCC).
Methods: To determine the probable future of the study, patients were evaluated under 3 groups as: OPMDs, OSCC and controls. Following DNA isolation, mtDNA copy numbers were assessed using customized primers by Quantitative Real time Polymerase Chain Reaction (qPCR). HPV infectivity was studied using L1 consensus primers by means of Polymerase Chain Reaction (PCR). One way ANOVA, Independent t-test and Receiver operating characteristic curve (ROC) was applied to aid in utilization of mtDNA content in characterizing OPMDs from OSCC. Multivariate logistic regression was performed to obtain Odds ratio (OR) for the significant relation of HPV with mtDNA content.
Results: mtDNA content was increased in OSCC than OPMDs and controls. A positive linear correlation was established for mtDNA content with increasing histopathological grades. HPV-positive OSCCs showed a higher mtDNA content than overall HPV-negative patients with high test sensitivity (83%) and specificity (83.1%).

Invited Talk: CDS05

Awareness and Knowledge about Ovarian Cancer Among Women Admitted in OBG Wards in a Tertiary Care Hospital in Goa, India

Presenting Author: Dr. Rini R.Naik
Dept. of Obstetrics and Gynaecology, Goa Medical College, Bambolim – Goa, India

Objective: The present study was undertaken to assess the knowledge of ovarian cancer - its risk factors, symptoms, screening, treatment and prognosis among women admitted in the Obstetrics and Gynaecology wards of Goa Medical College.
Method: A hospital based prospective study was conducted in the Department of Obstetrics and Gynaecology, Goa Medical College from December 2018 – February 2019. 426 women above 20 years of age admitted in general obstetrics and gynaecology wards were interviewed using a structured questionnaire, after obtaining an informed consent. Women diagnosed with any malignancy or premalignant conditions and being treated for the same, those admitted in labour rooms, eclampsia rooms, or those admitted with serious illness requiring intensive care and with psychiatric illness were excluded from the study. At the end of the survey the questionnaires were assessed and a score of more than 70% was amounted to good knowledge, 50 -69% being fair knowledge and a score of less than 50 % being poor knowledge about ovarian cancer.
Results: Out of the 426 women interviewed, 1.4% (6) women had good knowledge, 15.5% (66) had fair knowledge and 83.1% (354) women had poor knowledge about ovarian cancer. Most of the respondents (84.5%) were < 40 years of age, married (90.1%), Hindu (76%), had atleast secondary education (81.6%), socioeconomic class III and above (78.9%) and 59.2% were from rural areas. 63.4% of women interviewed had no knowledge about ovaries and their function. Only 14.1% of the women knew about symptoms of ovarian cancer and 2.8% were aware of its risk factors. The three highest known symptoms of ovarian cancer among these women were: Abdominal pain (71.8%), Persistent pain in pelvic area (64.7%) and increase in the abdominal size (60.6%). The most commonly known risk factor of ovarian cancer among these women was "presence of a close relative with ovarian cancer" (67.6%) followed by smoking (53.5%). A large percentage (43.7%) of women had poor knowledge about screening, treatment and prognosis of Ovarian Cancer. A substantial amount of the study population (49.3%) had stated their family and friends as their source of information regarding ovarian cancer, while only 18.3% of the women had obtained information from Health workers and medical professionals

Invited Talk: CDS06

Hypothesis of A Holistic Management of Cancer (Crab Method)

Presenting Author: Dr. Devasis Ghosh
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The main hindrance to total cure of cancer is a) the failure to control continued production of cancer cells, b) its sustenance and c) its metastasis. This review study has tried to address this issue of total cancer cure in a more innovative way. A 10-pronged "CRAB METHOD", a novel holistic scientific approach of Cancer treatment has been hypothesized in this paper. Apart from available Chemotherapy, Radiotherapy and Oncosurgery, (which shall not be discussed here), seven other points of interference and treatment has been suggested, i.e. **1.** Efficient stress management. **2.** Dampening of ATF3 expression. **3.** Selective inhibition of Platelet Activity. **4.** Modulation of serotonin production, metabolism and 5HT receptor antagonism. **5.** Auxin, its anti-proliferative potential and its modulation. **6.** Melatonin supplementation because of its oncostatic properties. **7.** HDAC Inhibitors especially valproic acid use due to its apoptotic role in many cancers. If all the above stated seven steps are thoroughly taken care of at the time of initial diagnosis of cancer along with the available treatment modalities of Chemotherapy, Radiotherapy and Oncosurgery, then perhaps, the morbidity and mortality rate of cancer may be greatly reduced

SESSION V: HIGH IMPACT PREVENTION AND RISK REDUCTION

Invited Talk: HIP01

Giant Cell Tumor of Tendon Sheath: Prospective Study of 20 Patients.

Presenting Author: Dr. Kshitij Arun Manerikar
Dept. of Surgical Oncology, The Gujarat Cancer and Research Institute, Ahmedabad, Gujarat-380016, India.

Introduction: Giant cell tumor of the tendon sheath (GCTTS) is a solitary benign soft- tissue tumor. It is the second most common tumor of the hand. GCTTS is most commonly found in the distal inter-phalangeal (DIP) joint of hand and very common in 4th decade of life. Our diligent search through available literature could not find any consensus on the etiology, prognostic factors and treatment modalities of GCTTS.We did prospective study of twenty patients with GCTTS of hand who underwent complete excision of the tumour, which was first of such kind of study.

Methods: A prospective non-randomized study of twenty patients with GCTTS of hand, who underwent excision of the tumor was done in Oncosurgery Department in our hospital. Compilation of the parameters were done which included, age and gender of patient, presentation of tumor, tumor size and location. Pre-operative X-ray of hand and wrist, ultrasonography and/or MRI whenever required was done. FNAC findings and post operative histo-pathological reports were recorded carefully. All the patients were followed up at months 3 and 6 and year 1 post-operatively, and recurrence rate was carefully noted.

Results: In our study of 20 patients, 13 were male and 7 were female. The mean age of patients was 44 years. Patients presented, an average 14 months after initial onset of symptoms. Size of tumor on clinical examination was mean diameter of 3.4 cm in its greatest dimension. Most common location of the tumor was the palmar aspect of the hand on the thumb followed by little finger. Four patients had neurovascular bundle involvement who presented with predominant pain and swelling.All patients underwent surgical excision without adjuvant radiotherapy. No surgical complications were noted in any of the cases.In follow up study up to the 1 year, 2 patients had recurrence.

Invited Talk: HIP02

Transferrin/α-Tocopherol Modified PAMAM Dendrimers for Improved Delivery of Paclitaxel for Cancer Treatment

Presenting Author: Dr. Swati Biswas
Dept. of Pharmacy, Birla Institute of Technology & Science-Pilani, Hyderabad, Telangana 500078, India.

According to the World Health organization (WHO) report, cancer is the second leading life threating disease, and accounts for 9.6 million deaths in 2018. In current scenario, 1 in 6 people die due to cancer. Various potent chemotherapeutic agents such as paclitaxel, doxorubicin, gemcitabin and cisplatin are used clinically for cancer treatment. However, the drug-related toxicity to healthy tissues, development of multiple drug resistance, poor solubility and permeability of the drugs limit the treatment outcome. In this study, transferrin anchored, PEG and α-Tocopheryl Succinate (α-TOS) conjugated generation 4 dendrimer has been prepared in order to develop a tumor targeted delivery system of a hydrophobic chemotherapeutic agent, paclitaxel. The dendrimers were characterized physico-chemically for size, zeta and encapsulation ability. The cellular uptake, cytotoxicity potential and apoptosis of prepared nano construct were evaluated in HeLa monolayer and 3D spheroids. G4-TOS-PEG-Tf demonstrated increased cellular uptake, cytotoxicity and apoptotic potential of PTX compared to free paclitaxel and G4-TOS-PEG-PTX. G4-TOS-PEG-Tf-PTX inhibited growth of HeLa spheroids significantly. The newly developed dendrimers hold promise as an efficient delivery system for paclitaxel or other hydrophobic chemotherapeutic agents for targeted delivery to tumors.

Invited Talk: HIP03

Synthesis, Anticancer Activity and Structure-Activity Relationship Studies of Some Substituted Pentanoic Acids

Presenting Author: Dr. Tarun Jha
Dept. of Pharmaceutical Technology, Jadavpur University, Kolkata 700032, India

Different variants of pentanoic acids act as anticancer agents. In our previous work [1], we reported effective adjuvant chemotherapeutic activity of some phenylactyl pentanoic acid derivatives. In continuation of the previous work, 13 new (C1-C13) compounds were synthesized and characterized. Phenyl/napththyl acetic acids were converted to phenyl/napththylactyl chloride by treating with thionyl chloride followed by condensation with L(+)glutamic acid to produce phenyl/napththylactyl-L(+)glutamic acids. These were treated with DCC in dry chloroform at 0º-5ºC followed by various amines and treated with sodium carbonate and 1 N hydrochloric acid to get the desired compounds. Along with these compounds (C1-C13), 16 (sixteen) previously reported compounds (C14C29) phenyl/napththylactyl pentanoic acid derivatives were biologically evaluated for cytotoxicity in the present study. It was seen that C4 is the best active newly synthesized compounds and C24 is the best active compound amongst the earlier reported series and was showing highly significant cytotoxicity against leukemia cell line Jurkat E 6.1. Flow cytometric apoptosis assay was done for those two best active compounds (C4 and C24) of those two series. The mechanism of cytotoxicity was confirmed by Reactive Oxygen Assay (ROS) assay and mitochondrial membrane potential assay. Further study of MMP-2 and HDAC8 expressions confirmed the dual inhibitory properties of these compounds. Results obtained for this study confirm antileukemic and dual MMP-2/HDAC8 inhibitory properties of these compounds. Structure-activity relationship (SAR) study showed interesting results.

Invited Talk: HIP04

Green Synthesis of Silver Nanoparticles Using Leaves of Murraya Koengii Linn and Its Anticancer Activity

Presenting Author: Dr. M Padmaa Paarakh
Professor & HOD, Dept. of Pharmacognosy, The Oxford College of Pharmacy, Bangalore 560068. India

Cancer is one of the highest impacting diseases worldwide with significant morbidity and mortality rates. The current known therapies are based on radio and chemotherapies and although in many cases, the patients have their health re-established, the treatment is very painful since their immunological system is severely compromised, because these procedures are not cells selective. We present a simple and eco-friendly biosynthesis of silver nanoparticles using the leaves of *Murraya koengii* Linn [Family: Rutaceae] and its determination of in *vitro* anticancer activity. 50 % Methanol extract of dried leaves of *M.koengii* were prepared. The aqueous silver ions [1 mM] when exposed to leaves extract were reduced and resulted in silver nanoparticles whose size is in range of 11 to 23 nm. The silver nanoparticles were characterized by UV-Visible, Fourier transform infra-red spectroscopy (FT-IR) and Transmission electron microscopy (TEM). *In vitro* anticancer activity was carried out using MTT assay using MCF-7cell line with 5 to 100 µg/ml concentration of silver nanoparticles. The IC_{50} value for *in vitro* anticancer activity was found to 88.96 µg/ml. The data demonstrate that nanotechnology-enabled delivery of Silver nanoparticles enhances their anticancer effects in breast cancer cells. Thus, silver nanoparticles synthesised using the leaves of *Murraya koengii* is promising agent for nanochemoprevention of breast cancer.

Invited Talk: HIP05

Scenario of Lung Cancer Incidence and Mortality in Tripura (2014-16). for Cancer Treatment

Presenting Author: Dr. Biswajit Debbarma
Co-Principal Investigator, Dept of Radiation Oncology, Regional Cancer Centre, Agartala Tripura - 99006.

Aim: To know the age of incidence, histopathology, stage of detection, Treatment received and Mortality.
Materials & Methods: Histology of Lung Cancer, Incidence, Stage of detection, treatment received and Mortality data collected from 2014-2016 (HBCR), in Regional Cancer Center, Agartala, Tripura. Standardized rate and trend were calculated for man and women by age, Stage.
Result: Among 539 patients enrolled, 423 were male and 116 were female within age group of 60 to 64 years in males and 50-54 years in females. Adenocarcinoma was most common histological type of both Male (47.52%) and Female (51.72%) , Squamous Cell Carcinoma in Male (35.46%) and Female (35.35%) others include small cell, Large cell, Mucuepidermoid Tumour adenosquamous, Carcinoma Mesothelioma, Signatring cell carcinoma, Hemorrgic Sarcoma. Most patients were diagnosed in advance stage III and IV due to late presentation. Chemotherapy was the most common mode of treatment in 68.56% male and 61.24% Female. Other modality of treatment includes combined Radiotherapy & Chemotherapy. Numbers of Lung Cancer deaths were 206 in males (out of 539) and 56 in females (out of 116 patients). Mortality incident ratio was 2.05% in males and 2% in females.

Invited Talk: HIP06

Unfolding the Myth Of Oral Cancer Arising Without Any Habits – Case Reports With Systematic Review

Presenting Author: Dr. Divyesh Wankhedkar
Dept. of Oral and Maxillofacial Pathology, Y.M.T Dental College & hospital, Navi Mumbai – 410210, India

Oral cancer is one of the most perplexing diseases affecting mankind all around the globe. It is more prevalent in Southeast Asia because of tobacco chewing, smoking and alcohol consumption. Tobacco in any form is considered as a major risk factor for oral cancer especially for oral squamous cell carcinoma. However, recent reports have highlighted the occurrence of oral squamous cell carcinoma in the absence of adverse habits. These findings have shifted the focus from the conventional etiological factors to lesser known factors. This presentation reports two such cases of OSCC occurring in patients with no known history of tobacco and alcohol habit. The recent increase in the cases of non-habit related oral squamous cell carcinoma necessitates to evaluate the role of factors such as inflammation, trauma, viruses, genetic alterations and immunity. This paper aims towards unfolding the contribution of these factors in causing oral cancer.

Invited Talk: HIP07

Evaluation of a Digital Method and Its Clinical Application to Improve The Accuracy of Color Perception in Toluidine Blue Stained Oral Mucosal Lesions

Presenting Author: Dr. Pallavi Saxena
Dept. of Dentistry, PBM Group of Government Hospitals, Bikaner, Rajasthan, India

Introduction: Oral Cancer is a global health problem with increasing incidence and mortality rate. India accounts for 86% of the world's oral cancer cases, based on analysis of population based cancer registries in 2018.[1] Early detection is often delayed due to minimal discomfort caused by innocuous, red or white patches, as an ulcer or a lump. This delay increases a chance for local spread and distant metastases. Therefore it is important to diagnose suspicious lesions as soon as possible, so that proper referral can be made. Clinical examination along with adjunctive methods are available like vital staining, brush biopsy and fluorescence imaging, for diagnosis of suspected oral mucosal lesions. Toluidine blue(Tblue) is one stain used for vital staining of oral mucosa. It is an acidophilic metachromatic dye, which means it reacts with tissues to produce a color different from that of original dye. But color so produced by this dye can sometimes be debatable. Color perception by human eye is a subjective phenomena and in order to make it quantifiable a coordinated color order system has been developed. The most accepted system color space system is CIELAB (Commission Internationale d'Eclairage) by International Commission on Illumination. In this system, L* refers to the **lightness** color coordinate (ranges from 0 for perfect black to 100 for perfect white), the A* component coordinates the red- green axis, while the B* component refers to the yellow-blue axis.

Material & Methods: After obtaining the institutional ethical clearance a pilot study will be done to standardize the methodology and sample size will be calculated.

Procedure for photography and software analysis: After completion of the staining, colored images of the lesions will be obtained using 20.1 mega pixel resolution sony cyber shot camera. In order to standardize the lightness between the images, a 5 mm white disk will be placed near the lesions during photographing. These images will then be transferred to a personal computer and using the elliptical marking tool of Adobe photoshop version CS2 9.0 ten representative dark areas will be selected. To compare the blueness of the selected blue color shades a colour guide will be developed and after comparing with colors on the guides the darkest blue area will be subjected for biopsy. The histopathological diagnosis will be made based on the WHO criteria (2005) for histpahtological grading of tumors.

Invited Talk: HIP08

Formulation Optimization and Biopharmaceutical Evaluation of Imatinib Mesylate Loaded Î²-Cyclodextrin Nanosponges

Presenting Author: Dr. Milind Dharmraj Kamble
Shreeyash Institute of Pharmaceutical Education and Research, Aurangabad, India

Objective: In the present investigation we were targeted ourselves to observed what is the effect of various levels of crosslinking agents and beta cyclodextrin concentrations on porosity, drug encapsulation, zeta potential and drug release by employing the quality by design approach to synthesize nanosponges rather than merely keeping both concentrations in proportions.

Methods: We have used a slightly modified the method reported earlier i.e. melting method in which we have used rota evaporator receiver vessel for melting cross linking agent and beta cyclodextrin rotated at 20 RPM at 1000 C. instead of simple melting method.

Results: In a quality by design approach we observed that out of four dependent variables i.e. porosity, drug loading, zeta potential and drug release three were significantly depends on the crosslinking of beta cyclodextrin molecules which was highly appreciated by the amount of cross linking agent present in the reaction. The pharmacokinetic of Imatinib loaded optimized nanosponges were compared with reference product to observe pattern of absorption and disposition.

SESSION VI: ANTI CANCER DRUG DELIVERY

Invited Talk: ACD01

Oral Insulin Delivery Using Artificial Peptide

Presenting Author: Dr. H. V. Adikane

Senior Principal Scientist, Chemical Engineering Division, CSIR-National Chemical Laboratory, Pune, India

The daily multiple insulin injection is the line of treatment for diabetes mellitus. As the oral insulin delivery mimics the physiology of endogenous insulin secreted by pancreas. Recently, the search for suitable carrier to develop oral insulin delivery has been intensified. However, the carrier toxicity and very less bioavailability of insulin remains the major problem in the development of oral insulin delivery. Preparation of a non-covalent insulin-peptide complex using different peptide made of 16 to 20 L-amino acids studied to overcome the problem. The in-vitro testing of insulin-peptide complex showed significant stability against the proteolytic enzyme. Whereas in in-vivo testing, the presence of 10% to 41% insulin in blood plasma observed after 30 to 60 min oral feeding of insulin-peptide complex. Results indicated that the peptide which showed moderate protection against pepsin and minor protection against trypsin and chymotrypsin has an important role in enhancing oral insulin bioavailability. However, the peptide which showed higher protection against trypsin and no protection against pepsin could not achieve significant oral insulin bioavailability.

Invited Talk: ACD02

Design of Polo Like Kinase 1 (PLK 1) Inhibitors Against Cancer

Presenting Author: Dr. Rameah L. Sawant

Dept. of Pharmaceutical Chemistry, Dr. Vithalrao Vikhe Patil Foundation's College of Pharmacy, Ahemadnaga, M.S.

Cancer is a disease in which a group of cells display uncontrolled growth, invasion and sometimes metastasis. Polo-like kinase (PLKs) is a conserved subfamily of serine/threonine protein kinases and is central regulator in initiation, maintenance, and completion of mitosis. It is considered as an attractive anti-cancer target because it is highly expressed in proliferating cells thereby promoting tumorigenesis. The PLK1 is of utmost importance due to its pivotal diverse regulatory role in the process of mitosis including mitotic entry, centrosome maturation, spindle assembly, chromatin segregation, mitotic exit and cytokinesis. PLK1 potentiates nuclear factor kappa-lightchain-enhancer of activated B cells (NF-κB) protein which promotes the cancer cell growth by decreasing apoptosis, increasing the angiogenesis, invasion and metastasis. NF-κB also fuels inflammation through cyclooxygenase-2 (COX-2) enzyme and interleukins. The 1,3-thiazolidin4-ones have been identified as an inhibitor of PLK1 through molecular modeling study. The computational studies were performed with PLK1 (pdb code 1Q4K) using VLife MDS 4.3 software. The complete exercise suggests that 1,3-thiazolidin-4-ones shows anticancer and antiinflammatory activity possibly because of inhibition of PLK1. More potent anticancer and antiinflammatory 1,3-thiazolidin-4-ones can be generated by substituting the electronegative groups at fourth position of aromatic ring and less steric group at fourth position, electronegative as well as polar groups at second position of benzamide ring which are attached at second and at third position nitrogen of 1,3-thiazolidin-4-ones respectively. This project is funded by ICMR, Ministry of Health and Welfare, New Delhi and hereby acknowledged.

Invited Talk: ACD03

Health Informatics- A Paradigm in Medical Field

Presenting Author: Dr. Guno Sindhu Chakraborthy
Parul Institute of Pharmacy and Research, Parul University, Vadodara, Gujarat

The term Health informatics (HI) commonly known as Health care informatics or biomedical informatics is a platform which is applied in the health care division mainly pertaining to management and patient related information. It deals with improvisation of health with respect to quality and efficacy. This field of science gathers information from all sources like computers, social, behavioral, management sciences and gives a concrete idea about the patient in a simplified manner. During this phase it uses the helps acquired from different paramedical support system which in turn gives knowledge about patient care delivery. It simplifies the five major pillars of system like Efficacy, Safety, Care coordination, Privacy and Public health. The major fields in HI which is used in areas of Surveillance, Prevention, Preparedness and Health promotion. This is mainly seen by Data, Information, Knowledge, Wisdom which helps in making decisions and implementations of the rules and regulations. Thus HI becomes the utmost need in the hour were all the information's are collected and gathered in a proper manner. This review will focus on various issues and safety measures required in Health Informatics related to public domain.

Invited Talk: ACD04

Small Molecule Discovery against Notorious Weed "Phalaris Minor" of Indian Wheat Crop Field"

Presenting Author: Dr. Durg Vijay Singh
Dept. of Bioinformatics, Central University of South Bihar Gaya, Gaya – 824236, India

Introduction: *Phalaris minor* is the most disquieting grass weed of wheat crop which resistivity against isoproturon was first reported in 1992 and later it was withdrawn. The herbicide isoproturon binds to the D1 protein of photosystem II (PSII) at QB binding site and thus hamper the electron flow there by inhibit photosynthesis. In early 1995 its application was withdrawn as weed developed its resistivity towards the herbicide.Thereafter alternate herbicides were introduced but, resistance against alternate herbicide were also reported [1]. A series of computational approaches have been implemented to discover herbicides against the D1protein[2-3]. The methods implemented are comparative modelling, virtual screening, de-novo drug designing and molecular docking and MD simulation and binding free energy calculation. Through computational study, lead molecule were prioritized based on binding affinity and inhibition constant and compared with reference ligand (ref_lig) triazine. The conformational stability of individual prioritised docked complexes was evaluated by molecular dynamics (MD) simulation and MM/PBSA method. Amino acid residues A-225, S-226, F-227 and N-229 present in the binding site of protein play crucial role in the stability of the protein-lead complex via H-bond and pi-pi interaction. Moreover, binding free energy have been calculated using g_energy and MM/PBSA method.

Methodology: In order to design and develop potential herbicides against D1 protein of PSII, computational approaches has been used. The computational methods implemented for this study comprises modelling of D1 protein based upon the template with PDB ID. 3WU2 [4]. Later, retrieval of molecules from open source database (Weed Science dataset including all the molecules from C1, C2 and C3 class of herbicides, molecules from Phase database, and lastly analogues of C1, C2 and C3 herbicides obtained from ZINC12 database) has been carried out. Four featured e-pharmacophore has been generated based upon known reference herbicides (isoproturon, methabenzthiuzuron and metoxuron). Virtual screening of retrieved molecules has been done, followed by molecular docking of hit compounds. *Insilico* ADME has been applied upon prioritised hit molecules. Lastly, laboratory testing (Filter paper testing and Sandwich filter paper testing) has been carried out for reference as well as lead molecules.

Results: Modelled structure has been validated for correctness of structure (Figure 1). Three features e-pharmacophore has been established and 9000 hit molecules has been identified (focused library) from phase database. This focused library, molecules retrieved from Weed Science database, and analogues of C1, C2 and C3 obtained from ZINC12; has been further put through molecular docking studies (HTVS, SP and XP algorithm; respectively). Molecules were further subjected to ADME test to prioritise the molecule.

Invited Talk: ACD05

Novel Antibacterial Protein Antibiotic 'P128' Synergizes With SOC Antibiotics Against Drug Resistant Staphylococcus Aureus and Shows Potent Anti-Biofilm Activity.

Presenting Author: Dr. Aradhana Vipra
Dept. of Microbiology, Gangagen Biotechnologies, Ltd, India

Background: P128, an antimicrobial protein (lysin) antibiotic is rapidly bacteriolytic against antibiotic-sensitive and -resistant S. aureus in vitro and in vivo. Lysin P128 kills by degrading the bacterial cell wall and is being developed as a combination therapy with antibiotics, for bacteremic S. aureus infections. P128 and standard of care antibiotics (SOC) were tested against a range of contemporary clinical S. aureus isolates including antibiotic-resistant strains to test its bactericidal and synergistic activity. P128 was evaluated for activity on biofilms since biofilms play a role in pathogenesis resulting in treatment failures.
Methods: Checkerboard and time-kill curve analyses of P128 and SOC antibiotics (oxacillin, vancomycin daptomycin, linezolid, ciprofloxacin, azithromycin) were performed. Bacteria were suspended in growth media at a concentration of 5 x 105 CFU/mL and exposed to P128 and/or SOC antibiotics at the minimum inhibitory concentration (MIC) (or multiples thereof) for up to 24 hours at 35°C with or without agitation. For time kill assays, cultures were sampled at timed intervals and viable bacterial numbers (CFU/mL) were determined. The results of the checkerboard assay were interpreted by plotting an isobologram or calculating the fractional inhibitory concentration index (FICI) for the two antimicrobials. For anti-biofilm activity, S. aureus biofilms were grown either in wells of microtitre plates or on the luminal surface of catheters. Antibiofilm-activity of P128 alone and in combination with SOC antibiotics was detected by staining the wells using crystal violet and through SEM imaging of catheter surfaces.
Results: P128 had a bacteriolytic effect against 105 S. aureus strains tested. At 1X MIC concentrations, P128 reached >99.9% killing within 30 minutes, while SOC antibiotics required at least 6 hours. P128 exhibited significant synergistic effects with a variety of antibiotics irrespective of the mechanism of action of the antibiotic or the chemical class. For all synergistic drug combinations, P128 and SOC antibiotic concentrations were in sub-MIC ranges. Surprisingly, strains that were resistant to oxacillin (MIC ≥16 µg/mL) became re-sensitized to the antibiotic (MIC= 0.5 µg/mL) in the presence of P128 (MIC= 0.03-0.1µg/ml). VRSA (MIC ≥32 µg/mL) became re-sensitized to vancomycin (MIC= 0.25-2.0 µg/mL). In biofilm assays, biofilms formed by S. aureus strain in microplate wells and on the surfaces of catheters were cleared by P128 at 1X MIC whereas vancomycin, daptomycin, and linezolid were ineffective at up to 250 - 500X MIC. Bacterial viability was significantly (2 – 3 log10) lower in P128 treated biofilm compared to biofilm exposed to antibiotics or buffer controls.

Invited Talk: ACD06

Formulation of Moisturizing Cream Using Oil Deodorizer Distillate of Indian Soya Bean

Presenting Author: Dr. Aradhana Khare
Associate Professor, Amity School of Applied Sciences, Amity University Mumbai, India

Introduction: Soybean oil deodorizer distillate is obtained from waste products of soya bean oil processing industries during *deodorization* process of soyabean oils. It constitutes phytosterols, tocopherols, phytosterol-esters, glycerides, steryl-esters, and free fatty acid, known for their anti-cancer, anti-oxidant, anti- inflammatory, anti-HIV, anti-coagulant, anti-bacterial, analgesic and comparative immune-modulation activities. It was thoughtful to explore the use of Soya bean oil deodorizer distillate as an active ingredient in moisturizing cream.
Objective: The objective of present work was to formulate a moisturizing cream using SODD without adding any specific chemical as preservative and to evaluate its physicochemical properties like pH, spreadability, viscosity, thermal stability, particle size and antioxidant activity.
Result: The result obtained clearly showed a promising potential of a moisturizing cream containing a specific ratio of SODD. Thus, it is concluded that SODD can be successfully incorporated in moisturizing cream to avail its cosmetic benefits. SODD is treated as waste product and sold at inadequate prices to European and American countries. After purification, the tocopherols obtained from SODD imported from foreign companies by Indian companies at an enormous price causing economic drain.

ORAL PRESENTATION ABSTRACT

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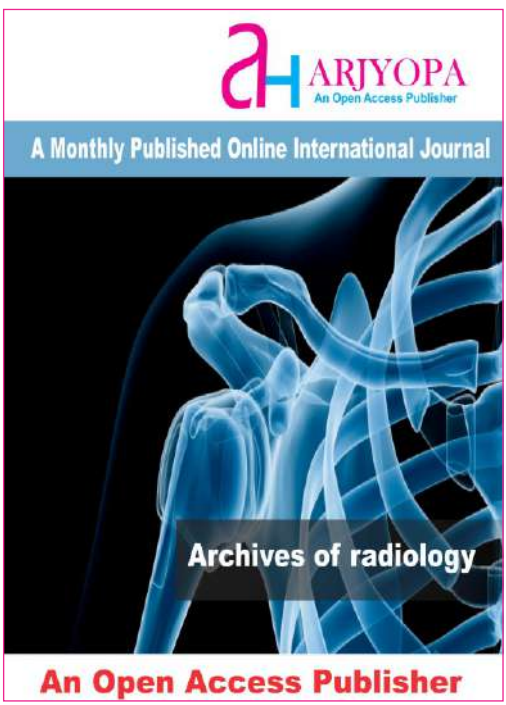

SESSION I: CANCER SCIENCE AND ONCOLOGY

Oral: CSO01

The Role of ADAMs in FGFR2-mediated Trans-Activation of EGFR/MAPK Signaling and NOTCH Pathway in Endometrial Carcinomas

Presenting Author: Garima Dixit
Inflammation Program, Roy J. and Lucille A. Carver College of Medicine University of Iowa, Iowa City, Iowa, USA

Endometrial cancer (EC) is the fourth most common cancer in women after breast, colorectal and lung cancer in the world. While only curable at an early stage through surgery and adjuvant radiotherapy, outcomes are poor for patients with metastatic or recurrent disease and the five-year survival rate for these patients is less than 15%. Somatic mutations of the receptor tyrosine kinase fibroblast growth factor receptor (Fgfr)2 isoform 2b occur in about 16% of endometrial carcinoma, giving the scope for identification of associated genomic events that contribute to the oncogenesis of this disease. Activation of FGFR2 mediates a disintegrin and metalloprotease (ADAM)17-dependent activation of the epidermal growth factor receptor (EGFR)/MAPK signaling pathway. Previous work has shown that crosstalk between EGFR signaling and Notch pathway can have an oncogenic role in several types of cancer. Since ADAMs are important mediators of EGFR and NOTCH pathway activation, we anticipated that somatic mutations in Fgfr2 might cause dysregulation of these two signal transduction pathways leading to oncogenic transformation in EC. Utilizing EC cells harboring FGFR2 mutations, we show that somatic mutations of FGFR2 were not constitutively active and required fibroblast growth factor (FGF)7 stimulation to display oncogenic potential. We demonstrate that FGFR2 mutations activate EGFR and NOTCH pathways upon FGF7 stimulation in a metalloprotease-dependent manner. Moreover, shedding of the EGFR-ligand and ADAM17-substrate HBEGF as well as of the ADAM10-substrate betacellulin was increased in FGF7/FGFR2 stimulated EC cells leading to downstream activation of EGFR and the NOTCH pathway. Inhibition of metalloprotease activity in these EC cells prevented FGF7/FGFR2-mediated oncogenic cell transformation as well as EGFR/MAPK and NOTCH signaling as evident through 2D-soft agar colony formation assays. Additionally, RNAseq analysis of EC patient samples also supported this observation and indicated strong association of somatic mutations in Fgfr2 gene with NOTCH and EGFR/MAPK signaling components. These findings provide new and exciting insights into driving oncogenic pathways in endometrial malignancies, and warrant future clinical studies with FGFR inhibitors for EC and other FGFR2-associated carcinomas.AKT1. PHLPP1 and AKT1 have a good diagnostic value.

Oral:- CSO02

Cancer Research: Cell-adhesion Dependent Mechanisms Regulating Mitosis

Presenting Author: Deepesh Kumar Gupta
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Integrin-mediated cell adhesion is required for normal cell cycle progression during G1-S transition and for the completion of cytokinesis. Cancer cells have ability to grow anchorage- independently, but the underlying mechanisms and the functional significance for cancer development are unclear. The present work describes novel data on adhesion dependent mechanisms regulating cytokinesis and centrosomes, disturbances cause generation of aneuploidy. Non-adherent fibroblast failed in the last step of the cytokinesis process, the abscission. This was due to lack of CEP55-binding of ESCRT-III and its associated proteins to the midbody (MB) in the intercellular bridge (ICB), which in turn correlated with too early disappearance of PLK1 and the consequent premature CEP55 accumulation. Integrin-induced FAK activity was found to be an important upstream step in the regulation of PLK1 and cytokinetic abscission.Under prolonged suspension culture, the MB disappeared but septin filaments kept the ICB in the ingressed state. Upon re-plating on fibronectin, such cells were found to divide through traction-based abscission. Non-adherent cytokinetic cells maintained septin filaments around the ICB for >24 hours, but septin was gradually depolymerized later on and furrow-regressed binucleated cells were generated (<15%). Binucleated non-transformed cells were halted in G1 and became senescent, possibly via PIDDosome formation by two centrosomes merging. In contrast to normal fibroblasts, rastransformed fibroblasts were able to recruit the ESCRT-III- associated protein ALIX to MB under non-adherent condition.

Oral: CSO03

Numerical Study of Effect of Nutrient and Oxygen Concentration on Tumor Cell Growth and Proliferation

Presenting Author: Dhanke Jyoti Atul
Assistant Professor, SPPU, BVCOE, Lavale, Pune – 412115, India

Predicting tumor cell growth and proliferation can be modelled by mathematical formulation. Proliferation is an important part of tumor development and progression. Low oxygen levels in tumor cells may be a basic cause of uncontrollable tumor growth in some cancers. In this study a coupled approach for the development of tumor involving the effects of oxygen and nutrient concentration together is analyzed using continuous and discrete models. Numerical study is a process by which a real world problem is described by a mathematical formulation. Mathematical modelling and simulation has very important role in predicting tumor cell growth and proliferation. The model is solved numerically using finite difference method and simulated using MATLAB. The effect of varying the magnitudes of parameters is analyzed. The obtained results were compared with an experimental result and the convergence is observed.

Oral:- CSO04

Measurement of Oxidative Stress and Antioxidant Status in Patients With Carcinoma Breast.

Presenting Author: Taneja Neha
Amity Institute of Public Health,Amity University, Noida, India

Introduction: Oxidative stress is an imbalance between production of reactive oxygen species and antioxidant status. Oxidative stress may cause DNA damage, genetic changes and predisposes to carcinogenesis. Interestingly, other environmental factors such as diet, physical activity and type of food intake also have a role in generation of oxidative stress. Genetic & environment interactions also occur in breast carcinoma, hence in the present study we investigated the role of oxidative stress in patients with carcinoma breast and correlated the same with other factors such as nutritional intake, physical activity and tobacco intake. Malonyl-di-aldehyde (MDA) levels measures the level of oxidant stress. Super oxide dismutase (SOD) and total antioxidant status (TAS) corelates with the antioxidant status of the body.Aims: The aim of the study was to measure and compare the level of marker of oxidative stress and antioxidant status between patients of breast carcinoma and control cases.

Method: This was a prospective study. Blood samples from 60 study subjects were taken for the study which included 30 breast carcinoma cases and 30 control samples. For measurement of MDA, SOD & TAS, serum and plasma analysis of the samples was done using spectrophotometric and calorimetric assays. Breast carcinoma patients were further studied to see the effect of dietary factors and life style factors such as cigarette smoking, physical activity on levels of MDA, SOD & TAS.

Result: Both MDA & SOD levels were found to be elevated in patients with carcinoma in comparison to controls. There were no significant differences observed in the total antioxidant status. Such investigations may help to suggest future strategies for non pharmacological interventions to prevent breast cancer.

Oral: CSO05

Expression Profiling and Clinical Correlation of PHLPP1 and AKT1 in Gastric Cancer

Presenting Author: Soni Kumari
Division of Molecular Oncology, National Institute of Cancer Prevention and Research,Noida- 201301, India

Background: The kinase AKT mediates resistance of cancer cells to death and is constitutively active (phosphorylated) in cancer cells. Whereas the kinases that activate AKT are well characterized, less is known about phosphatases that dephosphorylate and thereby inactivates it. We investigated regulation of AKT activity and cell death by the phosphatases PHLPP1.

Methods: We recruited normal gastric mucosa (n = 40), primary gastric tumor biopsy samples (n = 120) in this study. We used gastric cancer cell line, AGS, for validation of our data. Expression profiling at transcript level was done by semi-quantitative and quantitative PCR and at proteome level by immunohistochemistry, immunofluorescence and immunoblotting. Receiver operator characteristics analysis was done for determining the diagnostic utility. Metthylation status checked by treated AZA and TSA with AGS cell line

Results: Our semi-quantitative data show a significant down regulation of PHLPP1 (p=<0.0001) in 27.7% of tumors and AGS cells (p=0.158) and significant up regulation of AKT1 (p=0.002) in 35% of tumors and AGS cells (p=0.0006) as compared to gastric mucosa. Concordant to RTPCR and qRT-PCR western blot analysis showed that PHLPP1 expression is significantly down regulation (p= 0.0014; 95 % CI = 0.1777 to 0.8770). The treatment with demethylating and/or HDAC inhibiting agents reactivated the PHLPP1 expression in the AGScell line indicating that the inactivation of PHLPP1 is due to promoter methylation.

Oral:- CSO06

Carcinoma of External and Middle Ear, Characteristics and Survival. A Two Year Study At A Tertiary Care Centre in Western Maharashtra.

Presenting Author: Roy C. A.
Dept. of Head and Neck Oncology, Dept. of ENT, B.J Govt. Medical College, Pune.

Objective: To study and evaluate carcinoma of external and middle ear,treatment modalities and prognostic factors.
Methods: A prospective study of 7 patients with carcinoma of external and middle ear at our centre from June 2015 and June 2017 was conducted. 7 Patients underwent surgical intervention followed by radiotherapy.
Results: Chief complaint was otorrhoea.1patient underwent surgical intervention for CSOM, audiometry was disproportionate to visible disease. Biopsy was done.3 patients had well differentiated squamous cell carcinoma,2 had moderately differentiated squamous cell carcinoma,1 had adenoid cystic carcinoma, 1 had basal cell carcinoma. 6 patients underwent lateral temporal bone resection with adjunct pinna resection, 1 underwent sleeve resection. All patients receive radiotherapy. 1 patient died 8 months after treatment, 6 have survived disease free at median time of 24 months.

Oral: CSO07

Risk Factors In Breast Cancer a Clinical Approach

Presenting Author: Priyanka Sarkar
Dept of Surgery, Wanless Medical Centre, Miraj, India

Carcinoma of breast is one of the common malignancy which accounts for 23% of all cancers. The present studies was conducted in the Department of General Surgery Miraj Medical Centre which shows 320 case of carcinoma of Breast were studied which shows Maximum incidence seen between age group of 40 to 49 yrs with female dominating 308 cases. Going to the history of Menarche it started at the age of 13 yrs and late menopause was seen at the age of 46 to 49 years. Prolonged menstrual activity seen after the age of 40 years. These cases were also studied for any other Benign Breast Diseases and 25 cases out of 320 had Benign Breast Diseases. A family history was taken shows 114 cases out of 320 has history of Breast disease in the family. The diet maximums were vegetarian and they were obase. In the present studies following major factors such as Personal History of Breast disease , Family History of Breast Disease, Breast Disease in Mother- sister, Benign Breast disease in personal history proved by FNAC/Operation and any other malignant disease of Breast were studied. Minor Factors such as Early Menarche, Late Menopause, Prolonged Menstrual Activity, Nulliparous or over at the age of 35 year at first pregnancy , Personal History of Endometrial/ Ovarian Cancer was studied, Factors such as Personal use of Oestrogen, Obesity, High intake of fatty diet, Exposure to lonising radiation as well as Chronic Psychological stress factors were studied. Patient follows up according to identified risk factors. In major factor if Personal History of carcinoma of the breast pts were subjected to clinical examination every three month, Mammogram every year, chest X-ray, LFT, CT SCAN, CEA, on the periodical basis. If family History of carcinoma of the breast in mother- sister found then for under the age of 35years clinical exam every 6 month until pt age is 35 years. For over the age of 35 years clinical exam every 4 months, Mammogram every two years,Our studies shows by doing all these risk factors assessment early detection evaluation and treatment is possible which reduces the morbidity and mortality.

Oral: CSO08

Immunoprofiling of EGFR and K-RAS in Colorectal Cancer as Predictive Therapeutic Biomarkers

Presenting Author: Sophia Thomas
Dept. of Pathology, Jawaharlal Nehru Medical College, Dmins(DU), Sawangi(M), Wardha – 442001, India

Aim: The present study is aimed at immunoprofiling the cancer cells of CRC (Adenocarcinoma) for EGFR and K-RAS as the pathogenic determinants and its relationship with the grade (AJCC/TNM).
Materials and methods: 1) Thirty-two cases of CRC from various anatomical locations diagnosed either on biopsy /resected specimens of colon harbouring the growth were included for analysis. **2)** The IHC was carried out by standard multistep procedure in evaluation of EGFR expression and K-RAS by commercially available monoclonal antibodies. **3)** The localisation, positivity and intensity scores were allotted to tumor tissue by using standard references published in literature. **4)** The recording of observations were done for three variables a) The results of IHC for EGFR and K-RAS b) Discordance with EGFR and K-RAS results c) EGFR and K-RAS results and stage of the disease.
Results: 1) Total number of cases - 32(Male = 20 female= 12,M:F = 5:3) **2)** Locations (n=32)- as detailed in paper, **3)** TNM/AJCC staging (n=32), Stage I - 04(12.5%), Stage II -12 (37.5%), Stage III -12(37.5%), Stage IV-04(12.5%) **4)** IHC Results (n-32) i) No. of EGFR only positive cases with 3+ IHC score - 12 ii) No. of EGFR and K-RAS positive cases -13 iii) No. of EGFR and K-RAS negative cases - 07 **5)** Distribution of 13 cases which are EGFR and K-RAS positive, Stage I- 03, Stage II- 04, Stage III- 06 and Stage IV- 00

SESSION II: CANCER RESEARCH AND THERAPY

Oral: CRT01

Potent Stromelysin-2 Antagonist Design for Cancer Malignancies

Presenting Author: Sudheer Kumar Katari
Centre for Advanced Research, Sri Venkateswara Institute of Medical Sciences University, Triupati-517507

Stromelysin-2 (SL-2) or matrix metalloproteinase10 (MMP10) is an extra cellular matrix (ECM) protease that can degrade fibronectins, gelatins of type I, III, IV, V; weakly collagens III, IV, V and activates other pro-collagenases and pro-gelatinases. Over expressed human MMP-10 is majorly involved in arthritis and metastasis of several cancers. Co-crystal structure of human MMP10 was retrieved from protein data bank possesses a two featured pharmacophore model (DD) that was screened against 28.5 million inhouse library molecules. 2786 CLRI-MMPi compounds were docked in the grid region (NGH) of MMP-10 and the best docked ligand (MMpI200415) was also screened against inhouse library molecules. 2,000 structural ligands were passed through rigid receptor docking (RRD) protocol, where the ligands were refined and docked by high throughput virtual screening [HTVS-10%], standard precision [SP-10%] and extra precision [XP-100%] over the MMP-11 (NGH) using grid based ligand docking with energetics (GLIDE) and molecular mechanics generalized Born surface area (MM/GBSA) estimations by Prime. Among the obtained 15 dock complexes, one ligand has better scoring functions than NGH and MMpI200415 (Table). Lead also showed far better scoring functions in quantum mechanics polarized ligand docking (QPLD) followed by binding energy estimations (katari et al., 2019). Lead displayed 5 bonded interactions and 19 non-bonded interactions in dockings compared to 5 bonded and 13 non-bonded interactions by MMpI200415, 5 bonded and 16 non-bonded interactions by NGH with MMP10. Lead, MMpI200415 and crystal ligand were validated as actives in the presence of thousand decoys by receiver operative characteristic (ROC) curve metrics revealed ROC of 0.89, area under accumulation curve (AUC) of 0.89. Lead, MMpI200415 and NGH of MMP10 complexes were simulated for 300 ns molecular dynamics (MD) simulations and the dynamics were assessed to determine the stability of lead was better by lesser deviations, lesser fluctuations, lesser energies with more interactions particularly chelating catalytic triad (His217, His221, His227) and catalytic zinc in all 1,000 trajectories respectively.

Oral: CRT02

In-Silico Identification of Small Molecules Targeting H-Ras And In-Vitro Cytotoxicity With Caspase Mediated Apoptosis in Carcinoma Cells

Presenting Author: Hetal Damani Shah
Dept. of Biological Sciences, Narsee Monjee Institute of Management Studies University, Mumbai, India

H-Ras oncogene plays a critical role in the malignant transformation of normal cells through constitutive activation of the GTP-bound protein leading to uncontrolled cell proliferation in several cancers. Thus, H-Ras oncoprotein serves as an excellent target for anticancer drug discovery. To identify novel H-Ras inhibitors, we performed structure-based virtual screening of the Maybridge HitFinder™ library using Schrodinger suite. Thirty ligands were identified as they showed preferential in-silico binding initially to H-Ras proteins with Gly12Val, Gly13Asp, and Gly12Val-Gly13Asp mutations. Three representative molecules were tested for antiproliferative effect on T24, MCF-7 and HDF-7 using 3-(4,5dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide assay. Two compounds (Cmpds) showed antiproliferative activity exclusively in the T24 and MCF-7 cancer cell lines with minimal effect on the control HDF-7 cells. The effect of compound treatment on cell cycle progression, assessed by propidium iodide (PI) staining, depicted increased arrest of Gly12Val H-Ras mutated T24 cell line in the sub G1 phase. Further, Annexin-V PI dual staining and pan caspase inhibitor Z-VAD- fmk indicated caspase-dependent apoptotic activity of Cmpds 1 and 3. Our findings demonstrate caspase-dependent apoptotic activity of Cmpds 1 and 3 selectively against Gly12Val mutated T24 cancer cell line implicating potential therapeutic value in bladder cancer and H-Ras mutation-associated cancers.

Oral: CRT03

Theranostic Tool for Targeted Breast Cancer Therapy

Presenting Author: Joga Singh
University Institute of Pharmaceutical Sciences, Panjab University, Sector 14, Chandigarh, 160014

Conventional chemotherapy for breast cancer is blind, nonspecific and has low bioavailability. The present project focuses on targeted therapy segment for treatment of cancer. We have come up with a theranostic tool for the targeted delivery of docetaxel (DTX) to the breast cancer site. Presently, used DTX therapy is associated with wide variety of issues viz: a) use of ethanol as a solvent, b) P-gp efflux of drug from the cancer compartment c) imprecise delivery of DTX to the breast cancer cells, and d) therapeutically low doses of DTX being available, making the cancer cells more resistant towards therapy.

Our research is based on development of lipidic nanoconstructs of DTX in combination with a p-gp efflux inhibitor, which we have named as 'DLEN' (Fig 1). Due to its nano-dimensions, a significant therapeutically active DTX concentration reaches the cancer site. Further breast cancer specific delivery will be attained by conjugating DLEN with a peptide ligand. We have explored potential ligands (peptide) i.e., iRGD (Fig 2) for selective positioning of DLEN to the tumour site. It has been reported that iRGD is able to target the tumour site and it also mediates increased penetration of the drug due to its ability to bind to neuropilin-1 (NRP-1) dependent cells. Since, DLEN is purely aqueous based formulae; it can easily surpass the lacunae associated with the existing docetaxel therapy (using 1:1 tween 80 and ethanol). We also plan to decorate the peptide-DLEN conjugate with fluorescent quantum dots (QDs) (Fig 3) to monitor the real time tumour recession. On basis of preliminary CLSM studies, it was observed that uptake of nanocarriers was sustained for more than 6 h in MCF cancer cell lines.

Fig 1 Product realistic Image

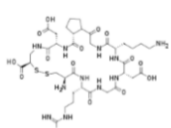

Fig 2 Nine amino acid cyclic peptide, iRGD

Fig 3 Realistic image of QDs

Oral: CRT04

Lifestyle Patterns and Cancer in India: A Challenge for Public Health

Presenting Author: Akhter Hussain Bhat
Dept. of Sociology, Aligarh Muslim University, Aligarh, UP, India

Introduction: Cancer is the second leading cause of death. According to WHO, about 1 in 6 deaths is due to cancer. Evidence suggests that over 10 million people will die annually by the year 2020 due to cancer (Stewart, 2003; Ali et al, 2011). Cancer is caused by both the tendencies and the triggers (Buckman, 1996). Tendencies indicate an inclination towards cancer due to hereditary or genetic factors and the triggers can arise from the environment, from one's lifestyle or from some virus (Bhat et al, 2013). The lifestyle factors include smoking, Improper diet, alcohol, infections, and physical inactivity (Anand et al, 2008). According to the Cancer Foundation of India (CFI), Kolkata, 60-70 per cent cancer cases in India are lifestyle oriented. The lifestyle risk factors remain the pivotal issue for effective public health implementation in India, which refers to the efforts for preventing disease, and promoting health.

Objectives and methodology: This paper is an analytical and descriptive one. It seeks to explore the various factors for the occurrence of cancer in India. It tries to describe the role of lifestyle patterns in the causation of cancer in India. The work is based on secondary data.

Findings: Globally, there are 18.1 million cases and 9.6 million cancer deaths in 2018. The findings indicate that of all cancer related deaths, almost 25-30% are due to tobacco, 30-35% are linked to diet, about 15-20% are due to infections and the remaining percentage is due to other factors (Aly, 2012; McCormack, 2011; Anand et al, 2008). In India more than 1 million new cases of cancer are diagnosed every year. Although some authors argue that the risk factors in the causation of cancer in India are almost same as in other parts of the world (Anand et al, 2008; Ali et al, 2011; Mohan et al, 2018), the specific socioeconomic patterns and bio-cultural factors necessitate exploring other causation trajectories of cancer in India. The India: Health of the Nation's States Report 2017, puts cancer as the third leading cause of death in after cardiovascular diseases and chronic respiratory ailments. The data reveal that unhealthy diet, tobacco use, alcohol and drug consumption, low physical activity are responsible for 8%, 4.8%. 2.5%, 0.8% cancer causation in India respectively.

Oral: CRT05

Studies on Bioactive Potentials of Diplocyclos palmatus(L.) C Jeffrey- An Important Medicinal Wild Cucurbitace Species

Presenting Author: Ramya BR
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Introduction: Diplocyclos palmatus (L.) C. Jeffery a highly medicinally important wild Cucurbitacece species has been recorded as folklore medicine. The herbs' possessing anticancer potential appears to be a promising way of discovering novel chemotherapeutic compounds. This plant is an important source of biologically active compounds used in homeopathy.

Methods: The leaves and fruits were subjected for sequential extraction with acetone, pet ether, ethyl acetate, hexane, chloroform, methanol, and water. All extracts were subjected to biochemical studies such as phenols, tannins, flavonoids, terpenoids and antioxidant assays such as 2,2-diphenyl-1-picrylhydrazyl (DPPH), The parameters determined for proximate analyses and physical parameters include ash, moisture, and crude protein, fat, yield, solubility, color analysis all of there were carried out using the methods described by AOAC, 2006.

Results: It was observed that the moisture percentage of all parts of the plant shows fruits (8.52%) leaves (2.71%) and seeds (2.42%) respectively; solid content of the pet ether leaves extract 0.95%. The Red fruit of acetone shows 7.14 % chloroform 5.22 %. The crude fat content of red fruit shows 3.60%. Methanolic leaves extract showed significantly higher protein content of 12.12µg/ml, acetone shows 5.36 µg/ml, pet ether shows 10.53 µg/ml. Methanolic fruit extract showed significantly higher phenolics (8.894±0.01 mg gallic acid equivalent (GAE)/g extract).The extracts were subjected to assess their antioxidant potential using various in vitro systems such as DPPH, reducing power assay .Among the various extracts, methanol unripned fruit extract had highest DPPH radical scavenging activity (60% of inhibition ascorbic acid equivalent (AAE)/g extract), Overall, methanol was found to be the abest solvents for the extraction of antioxidant compounds from fruit and leaf.

Oral: CRT06

Addressing Proliferation-Invasion Dichotomy with Neoangiogenic Switching and Epigenetic Modulation: An Experimental Search over Post- operative Human CNS Tumor Tissue Samples

Presenting Author: Krishnendu Ghosh
Immunobiology Laboratory, Panihati Mahavidyalaya, Barasat Road, Kolkata-700110, India.

Objective: Cancer is responsible for global 9.6 million of death among which 2.9% morbidity occurs from brain and Central Nervous System (CNS) tumors. Proper therapeutic notions need better understanding of its diminutive biology. For the first time ever, crude post-operative human tumor tissue samples of some of the frequently known brain and CNS tumors with varied grades and origin, in and around Southern and Central part of West Bengal, had been analyzed to address 'proliferation-invasion dichotomy' aka 'go-grow hypothesis' with associative of neo angiogenic switching and allied epigenetical aspect in terms of methylation for futuristic therapeutic strategies.
Methods: In accordance with tissue biopsy and radiological intervention as Magnetic Resonance Imaging (MRI) & MR Spectroscopy, low grade intra-cranial astrocytoma (WHO grade II glial tumor), intra-dural meningioma (WHO grade I non-glial tumor) and extra-dural spinal ependymoma (WHO grade I glial tumor) procured from collaborative neurosurgery nodal center, underwent IHC and flow cytometry with Kiel cell proliferating antigen protein 67 (Ki67) and Matrix Metalloproteinase 2 (MMP2) assessing proliferation and gelatinase dependent microinvasion respectively while Immunohistochemistry (IHC) with Vascular Endothelial Growth Factor Receptor 2 (VEGFR2) and DNA Methyl Transferase 1 (DNMT1) appraised neo angiogenesis and tissue DNA methylation. Moreover, astrocytoma, the most dreaded glial tumor, belonging both to low and high grades, were further cohorted into non-invading or total and invading cell population after being pioneerly enabling isolated tumor cells to pass through the mimicking Extra Cellular Matrix (ECM) under stipulated laboratory condition while treating them separately with KI67-MMP2-VEGF to address proliferation-invasion-neoangiogenesis at such minute level followed by Immunocytochemistry (ICC) and RNA expression by RT & qRT PCR for same markers to suffice. IHC with DNMT1 had been correlated furthermore.
Results: Differential MRI data showed in T1/T2 parameter, confirmed highest midline shift and mass effect in astrocytoma along with high choline and low N-acetylaspartate (NAA) than its peers which steeply increased with the grades itself. While this was supported by Ki67-GFAP expression with correlated VEGFR2-VEGF neoangiogenic marker upshoot. Interestingly low grade ependymoma, least in proliferation-angiogenesis, showed much increased level of gelatinase in terms of MMP2 hinting towards dichotomy atleast among low grade CNS tumors of differential origin. However dichotomy did surfaced among the grades of astroglial tumor with differential proliferation related inter-cohort nature. Methylation level recorded highest in astrocytic tumors with proportional increase with its grades.

Oral: CRT07

Physical Adsorption: A Major Approach for Solidification of Self-emulsifying Drug Delivery System

Presenting Author: Dr. Jatinkumar Panara

Self emulsification system is very well-known formulation approach for lipophilic pharmaceutical drug substances. Solidification of self emulsifying drug delivery (SEDDS) is the advancement in the technology. The preparation of SEDDS involve drug, oil/lipid, surfactant and/or co-surfactant and when it comes to solidification of them (S-SEDDS), an additional excipient required that is an adsorbent. The S-SEDDS is more advantageous over SEDDS as it is having characteristics of both liquid formulation and solid formulation. In that novel approach contemporary review encompass emulsion comprises remedy applied for the physical adsorption by means of adsorbed on compacted subdivisions and converted it's to forms as a free flowing powder.There are number of customs to carry out adsorption of SSEDDS.Silicon dioxide,Calcium silicate, Cellulose base and Magnesium aluminometasilicate are the most commonly used adsorbents.

Oral: CRT08

Expression of PTEN and It's Diagnostic Role Iin Oral Submucous Fibrosis and Oral Squamous Cell Carcinoma With Concomitant Oral Submucous Fibrosis.

Presenting Author: Roshni Monteiro
Dept of Oral Pathology, SDM College of Dental Sciences, Dharwad, India

Aim: Oral submucous fibrosis (OSF), a potentially malignant disorder seen in Indian subcontinent and South East Asia, is found to be associated with betel quid and arecanut chewing. PTEN, a tumor suppressor gene, deleted on chromosome 10, negatively regulates PI3K/AKT pathway.[4] PTEN also plays a role in malignancies of thyroid, kidney, lung, breast; endometrial precancer, immunity. This study aims to compare the expression of PTEN in OSF and oral squamous cell carcinoma (OSCC) with concomitant OSF. Evaluate the PTEN expression and its diagnostic role in OSF and in malignant transformation. Assess the diagnostic role of PTEN in OSF and its malignant transformation.
Methods: The samples were randomly retrieved from the Departmental Archive which fulfilled the inclusion and exclusion criteria of the retrospective cohort study. The demographic data and clinical details of the cases were collected from the patient record. Of the total 70 cases, Group I- Normal mucosa (10); Group II- OSF (30); Group III- OSCC with concomitant OSF (30). Tissues were subjected for immunohistochemical analysis to detect PTEN and visualize it by supersensitive polymer-HRP detection system [BIOGENEX, San Ramon, California, USA], DAB chromogen was used. Standardized immunohistochemical procedure according to the guidelines given by BIOGENEX was followed. The sections were examined at an ocular magnification of X10 and then representative fields were chosen randomly; viewing at X40 (Positive cells will be counted from among 500 total tumor cells).
Results: OSF and OSCC were seen affecting the males predominantly (97%) than female (3%) patients. Majority of the patients in the OSF group were below 40 years of age (73.3%) while patients in the OSCC group were above 40 years of age (63.3%). PTEN correlation with age (60.9%) and duration of habit (74.2%) was statistically significant. Nuclear PTEN expression was seen in 90% cases of group I, 66.6% cases in group II and 30% cases in group III. Statistical significant difference from normal & OSF, OSF & OSCC was noted.

Oral: CRT09

Integrative Counseling Intervention for Mental Health Issues in Cancer Patients: A Qualitative Analysis

Presenting Author: Sapna Paliwal
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Introduction: Cancer is a life threatening disease and has different psychological and physical outcomes . It has negatively influenced psychological well- being and mental health issues in cancer patients. As per the statistics, Lips and Oral cancer is the highest prevalence in male (16.1%) and Breast cancer in female (14%) from total number of cases in both sexes in India. Research finding has shown that mind body intervention can decrease psychological distress in cancer patients.The purpose of this qualitative analysis is to determine the efficacy of Integrative Counseling Intervention (ICI) using meditation based approach, and emotion regulation based counseling, to enhance the mental health in cancer patients.
Methods: This study is designed as qualitative analysis of mental health issues in 30 clients (11, female and 19,male), with cancer (median age 60 years) visiting to a cancer care center were enrolled consecutively & followed between 1st November 2018 to 28th February 2019. Integrative counseling intervention was given to enhance their mental health while undergoing anticancer treatment (chemobiotherapy =12, radiation therapy =5, surgery =3) or follow-up (n =10).
Result: In this qualitative study the clients were from low income (16), middle income (8), and high income (6) economic status. The majority of client believed in divine power (21). The sample comprises all religion Hindu (16), Muslim (5), Christian (5), and Sikh (4). The majority of client also reported mental health issues before intervention such as Anger, Irritation, Denial, loss of faith in God, Unhappiness, Loss interest in life, Uncertainty, Hopelessness. After ICI Client reported the following positive behavioral changes such as more adjustable with disease; emotionally relax feeling, adherence of medical treatment and acceptance of the disease. The finding of this study is also supported by the of study conducted by (Jhyan Huan, 2016,) which had shown that the mindfulness based psychological intervention may improve mental health, quality of life and compliance with medication in cancer survivor.

POSTER ABSTRACT

ARJYOPA JOURNALS

Poster: EPP1001

Role of Circulating Mirna as Prognostic Markers for Breast Cancer

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Introduction: miRNAs have been demonstrated to play important roles in control of cell proliferation, cell differentiation, and apoptosis, thus their dysregulation contributes to tumor development. miRNAs have been detected in the plasma and serum in both healthy subjects and cancer patients. miRNAs circulating in plasma have some advantages as clinical markers compared with other forms of cfRNA, since they have a remarkable resistance to endogenous and exogenous ribonuclease activity, extreme pH conditions, and freeze–thaw cycles.
Methods: Plasma was obtained from 58 breast cancer patients at presentation. From 31 out of 58 patients, three follow up peripheral blood samples were collected for each patient during after surgery and at subsequent follow up. Plasma was isolated from the blood samples and circulating microRNA was isolated using Nucleospin Plasma miRNA kit. Levels of miR-155, miR-133a, miR-21 and miR-205 were measured by real-time PCR using Taqman Advanced miRNA assays. miR-16 was used as endogenous control. Levels of miRNA from 24 controls were also measured and used as reference to calculate fold-change for patient miRNA. Fold change was calculated using ddCT method. Statistical analysis was performed using GraphPad Prism v5.0.
Results: Levels of miR-155, miR-133a, miR21 and miR-205 were measured in presentation plasma of 58 breast cancer patients. miRNA expression did not correlate with age and ER status. miR-133a and miR-205 showed increasing trend with increasing disease stage although this was not statistically significant. However, significantly increased mean miR-133a and miR-205 levels were observed in patients who developed recurrence or metastasis compared to patients responding to treatment. Further, this difference was also observed in the first and second follow-up plasma of these patients. Also, while both miRNAs showed a decreasing trend from first to third follow-up in progressing patients, a slight increasing trend was observed from presentation to third follow-up in patients without disease progression.

Poster: EPP1002

BNIP3 is Frequently Down-Regulated in Gallbladder Carcinoma

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Introduction: Gallbladder cancer (GBC) is a frequent malignancy of biliary system. This disease is more prevalent in North and Northeast states of India including UP and Bihar. Epigenetic modification is one of the most focused targets of therapeutic interventions, which may be involved in regulating disease during its initiation and progression. DNA methylation, one of the mechanisms of epigenetic modifications, has been studied in various human cancers. Status and functional role of promoter hypermethylation of tumor suppressor genes in gallbladder cancer has been demonstrated in several reports. Numerous tumor suppressor genes are known to be inactivated by promoter hypermethylation. BNIP3 is a putative tumor suppressor gene which encodes a mitochondrial protein that contain BH3 domain and acts as pro-apoptotic factor. Studies in pancreatic and breast cancer have shown the silencing of BNIP3 by DNA methylation.
Methods: In the present study we evaluated expression of BNIP3 and the methylation status of promoter region in GBC and gallstone (taken as control) tissue samples. DNA and RNA were extracted from both case and control tissue samples by phenol-chloroform and TRIzol methods respectively. Extracted Genomic DNA was subjected to bisulfite modification using EpiTect Bisulfite Kit (Qiagen,USA) according to the manufacturer's protocol. Semi-quantitative RT-PCR was performed for GBC and gallstone tissues in 46 and 28 samples respectively for expression analysis at mRNA level. Association of the expression profiles was evaluated with different clinico-pathological indices. Methyl-specific PCR was performed in bisulfite converted DNA of GBC and gallstone tissues in 58 and 29 samples respectively. Student's t-test was used to test the association between BNIP3 expression and clinico-pathological features. Two-sided p-values <0.05 were considered significant.
Results: BNIP3 mRNA expression is significantly ($p<0.0001$) down-regulated in GBC with frequency of 35 when compared with gallstone samples. Tumors show significant inverse correlation with BNIP3 mRNA expression and lymph node metastasis ($p=0.0487$). The incidence of BNIP3 promoter methylation in the gallbladder cancer is 62.06% where as no methylation is found in tissue samples taken as control.

Poster: EPP1003

Synthesis and Pharmacological Evaluation of 4-Aryloxyquinazoline Derivatives Targeting EGFR Tyrosine Kinase as Cytotoxic Agents

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Epidermal growth factor receptor (EGFR) plays a critical role in the signal transduction pathways that regulate numerous cellular functions, such as proliferation, differentiation, migration, angiogenesis and apoptosis. Thus overexpression of this receptor is found to be responsible for progression of cancer. Previously reported EGFR inhibitors has suggested that 4anilinoquinazoline moiety is an important pharmacophoric feature for a compound that binds competitively to the ATP binding pocket of intracellular kinase domain and blocks the induction of downstream signaling networks mediated by tyrosine kinase. Thus in order to enhance the potency and selectivity of EGFR inhibitors, some new compounds with bioisosteric replacement of –NH with –O- at 4 position of quinazoline scaffold have been designed and synthesized. The synthesized analogues were screened for in vitro cytotoxicity against a panel of human cancer cell lines at National Cancer Institute, USA. Some of the synthesized compounds displayed moderate but selective cytotoxicity against various cell lines of leukemia. At 10 μM, the compound with phydroxyl substitution produced ~ 70% inhibition of CCRF-CEM and HL-60 (TB) leukemia cell lines with a mean percent growth inhibition of 47.16 % against six leukemia cell lines. All the designed compounds with general structure represented in fig. 1 were also docked with EGFR kinase domain complexed with a quinazoline inhibitor- lapatinib (PDB ID: 1KXX). These molecules showed good interactions with important aminoacids Met793 and Phe856 by hydrogen bonding and π-π stacking, respectively. The designed molecules were synthesized and characterized by various analytical techniques like IR, NMR and mass spectrometry etc.

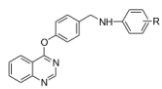

Fig. 1 General structure of 4-aryloxyquinazolines

Poster: EPP1004

A Review of Knowledge, Attitude and Practices of Cervical Cancer in Women of Uttar Pradesh, India

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Introduction: Carcinoma of the uterine cervix is a major health problem in developing countries including India. Current estimates in India indicate that every year 96,922 women are diagnosed with cervical cancer and 60,078 die from the disease. Cervical cancer is highly preventable if communities have adequate knowledge, positive attitude and practice effective screening methods. Although the data from the 20 population-based cancer registries in India indicates a steady decline in the carcinoma cervix incidence over the last two decades, it still remains the 2nd most frequent cancer among women. Since, there is dearth of studies representing knowledge, attitude and practice (KAP) about cervical cancer in Uttar Pradesh (U.P.), it becomes difficult to assess KAP status in this region. Hence, this study aims to summarize Knowledge, Attitude and Practices about cervical cancer and its screening in Uttar Pradesh.

Methods: This paper is based on information gathered from KAP publications on cervical cancer. PubMed and Google Scholar were used as the primary databases for literature search. “Cervical Cancer”, “Knowledge, Attitude and Practice”, “Uttar Pradesh” and “Screening” were used as keywords with “AND” as a Boolean operator. Only original articles published within the last 10 years were included in this review.

Results: Seven studies met the inclusion criteria with a total of 5,418 respondents. The sample size of the included studies ranged from 103 to 2500 respondents. Most of the studies are crosssectional surveys. The age of respondents ranged from 12 years to more than 70 years. The profile of subjects in the reviewed studies varied widely including students to healthcare professionals. Since studies included different sets of questions, it became a hurdle in the process of summarization. It was observed that knowledge about Cervical Cancer ranged from 15% to 67.1% with 11% to 91% being aware that Human Papilloma Virus (HPV) was one of the major causes of cervical cancer. However, these deviations in results may be due to variation in profile of respondents. Higher percentage of knowledge was observed among health care professionals despite the variances observed in different population sets.

Poster: EPP1005

Interaction Between Arsenic and Prostate Cancer in Bihar

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Prostate cancer is a common malignancy in man . Arsenic a heavy metal naturally found on the ground water earth . High level of arsenic is present in drinking water in districts of Gangetic zone of Bihar. Arsenic is associated with prostate cancer occurrence and mortality in people living in Gangetic zone of Bihar. Prostate cancer (caP) is a common reproductive cancer in men who are residents of Gangetic zone. Prostate specific antigen in serum was estimated by the ELISA (enzyme link Immunosorbent Assay) from malignant confirmation and to determine the age , stage , specific range . Sodium areniet level in tissue was estimated by Atomic absorption spectrophotometer (A.A.S) . The PSA level in prostate cancer patients and control groups shows mean PSA level of 1.29±02 ng /ml and sodium arsenite level 0.39± 0.34 ppb in the age control groups of 36 to 45 years . The groups :- A of being prostate hyperplasia patients have mean PSA (Prostate specific antigen) amount in serum of 59.0±6.53 ng/ml and sodium arsenite level 198±3.66 ppb in the age groups of 45 to 55 years. The groups :- B of low grade adenocarcinoma patients shows mean PSA (Prostate specific antigen) amount in serum of 75.0±3.53 ng/ml and sodium arsenite level 264 ±1.47 ppb in the age groups of 66 to 75 years . The groups :- C of high grade adenocarcinoma patients shows mean PSA (Prostate specific antigen) amount in serum of 51.0±3.53 ng/ml and sodium arsenite level 990±5.65 ppb in the age groups of 66 to 75 years .Sodium arsenite level and P.S.A level were cor-relation with prostate cancer patients and control groups .The significantly (P.volue ≤ 0.05) increased in prostate specific antigen when compored to sodium arsenite level .There compared with benigs prostate hyperplasia show lasses amount of sodium arsenite in tissue sodium arsenite level and PSA level in low gread Adenocarcinoma is directly proportionate while high grade adenocarcinoma in directly protionate . Therefore it can be concluded that there a correlation between sodium arsenite in tissue and PSA level of prostate cancer patients .

Poster: EPP1006

Design and Synthesis of Novel Substituted Chalcones as Potential c-Met Kinase Inhibitors

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c-Met is a receptor tyrosine kinase which is overexpressed in several solid tumors. Furthermore, it is also known to be expressed in some cancers that are resistant to the existing therapy for other kinase inhibitors. It is known to be involved in cellular processes such as angiogenesis, metastasis, invasion and migration. It is activated by a growth factor HGF. HGF/c-Met pathway is gaining importance in treatment of cancer owing to its multidimensional involvement. Presently, only crizotinib and cabozantinib have been approved for the treatment of cancer and there is a need for further development of c-Met kinase inhibitors.

Two series of novel substituted benzamide and benzenesulphonamide containing chalcone derivatives were designed and synthesized using the hybrid design strategy based on preliminary computational studies and design strategy. The synthesized compounds were characterized using IR, 1H-NMR, 13C-NMR and Mass Spectroscopy. The compounds were tested for in vitro antiproliferative activities against breast cancer (MCF-7), liver cancer (HepG2), and colon cancer (HT29) cell lines using SRB assay. The results indicated that benzenesulphonamide substituted chalcones had more promising antiproliferative activity with some compounds having GI50 10 µM. Further, the compounds were docked into c-Met kinase for identifying the probable interactions and the binding mode. It was observed that the benzenesulphonamide substituted chalcones interact through hydrogen bonding with Asp1222 and Glu 1227. Pi-pi stacking interactions were observed with Phe1223 in some compounds. The benzamide substitute chalcones were found to interact through hydrogen bonding with Gly 1224 and/or Lys1110. Further pi-pi interactions with Phe1223 and pi-cation interactions with Lys1110 were observed for some compounds. Considering the antiproliferative activity and the molecular docking results the compounds shall be evaluated for their c-Met kinase inhibition potential.

Poster: EPP1007

Association of ERCC4 SNP rs1800067 With Gallbladder Cancer in Indian Population of Eastern Uttar Pradesh and Western Bihar

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Gallbladder cancer (GBC) is a highly aggressive disease and sixth common cancer of the gastrointestinal tract. The incidence of GBC is related to gender, geography, and ethnicity which suggests that both genetic and environmental factors are involved in GBC. The high prevalence of GBC in India is in northern and north-eastern Uttar Pradesh, Bihar, Orissa, West Bengal, and Assam. The aim of the study is to investigate the association of SNP (rs1800067 G/A) of ERCC4 with GBC susceptibility and its correlation with clinical parameters. ERCC4 rs1800067 is present in the exonic region, results in a change from Arg to Gln at codon 415 which may alter ERCC4 protein function and thus influence the role of Nucleotide Excision Repair in GBC. A total of 300 GBC patients and 296 controls were enrolled in the present study. Genomic DNA was extracted and rs1800067 was genotyped by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). Our data suggests that the major allele G is more prevalent in GBC patients than controls. GG (OR = 3.9; 95% CI = 1.338.095; P = 0.0066) and GA (OR = 2.55; 95% CI = 1.04-3.62; P = 0.034) genotypes are statistically significantly associated with increased risk of GBC. The risk due to genotype (GG) is statistically significant (OR = 2.5; 95% CI = 1.76-3.605; P = <0.0001) when compared with GA + AA confirming major allele (G) as risk allele. ERCC4 rs1800067 is statistically significantly associated with the risk of GBC.

Poster: EPP1008

Improve Treatment Compliance By Providing Psychosocial Support With Special Emphasis On Weight Maintenance For Patients Diagnosed With Head And Neck Cancers.

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Background: Head and neck cancer include cancers of the mouth, nose, sinuses, throat, salivary glands and lymph nodes in the neck (NIH). Overall, 57.5% of global head and neck cancers occur in Asia especially in India. Head and neck cancers in India account for 30% of all cancers (Kulkarni, 2013). This type of cancer is most predominant in males. The most common risk factors are smoking (linked to smoking and smokeless tobacco) and drinking alcohol. (NIH). Patients with Head and Neck cancers experience a drastic functional and visible change due to the disease as well as during treatment (L.Penner, 2009). One of the major side-effects of disease as well as treatment of Head and Neck cancer patients is nutritional deficiency. They have one of the highest malnutrition prevalence rates, which affects patient's quality of life. One of the ways of minimizing weight loss for patients at nutritional risk can be done by weight maintenance, modulation of dietary components, and addition of oral nutritional supplements (Urooj, 2014). As mentioned, these changes lead to emotional distress, depression, anxiety, body image issues, and a host of other logistical and financial issues for the patient and their families. Hence an integrated care model is required for cancer patients where disease treatment along with psychosocial support is needed to improve the quality of life of .

Methodology: The Head and Neck patients were referred to the GJK staff by doctors from Medical Oncology department. The staff of GJK first identify the need of patients and then provide need-based psycho-social support such as Documentation Assistance & Financial Guidance and Regular follow-up with special emphasis on Diet and chemo education. In addition, special attention is provided to counsel patients to maintain diet diary (weight monitoring, calorie counting based on diet plan advised by dietitian) on daily basis during chemotherapy.

Result: In the year April 2018 till March 2019, 120 patients with Head and Neck Cancer were referred to GJK for psychosocial support as well as weight maintenance. Out of these 86% were male and 14% were female. All of them were provided with psycho-social support with special emphasis on maintaining weight. Total 886 psychosocial services were provided to patients. Out of 120 patients, 89% patients were able to sustain (gain and maintain) their weight during chemotherapy and only 11% patients lost weight.

Poster: EPP1009

Development of Surface Functionalized Lanthanum Strontium Manganese Oxide (LSMO) Nanoparticles for Hyperthermia Treatment of Breast Cancer

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Introduction: Inadequacy in existing therapies motivated the scientific community to develop novel strategies for the treatment of breast cancer. Post-treatment side effects, resistance and non-specificity are major hurdles restricting current clinical therapies (viz., surgery, chemotherapy, radiotherapy or hormonal therapy).
Hyperthermia is one of the strategies that is being extensively investigated as a promising adjuvant (or alternative) therapy for cancer (Bettaieb et al., 2013). Hyperthermia can be broadly referred to as the treatment of the disease by induction of high fever. The disparity in sensitivity towards heat among normal cells (withstand heat up to 500 C) and cancer cells (tolerate heat up to 450 C) enables hyperthermia induced treatment of cancer (Skitzki et al., 2009). On the other hand, Lanthanum Strontium Manganese Oxide (LSMO) nanoparticles have a low Curie temperature allowing controlled heating in the desired therapeutic window (410 C to 460 C) for hyperthermia. Our earlier work revealed that LSMO. nanoparticles mediated hyperthermia resulted in apoptotic cell death in cancerous cell lines (Bhayani et al., 2012, Haghniaz et al., 2015; Haghniaz et al. 2016) Further, intratumorally injected LSMO nanoparticles mediated hyperthermia treatment caused ~84% tumor regression and 50% increase of survival time in melanoma-bearing C57 mice. However, targeting deep-seated tumors viz. breast cancer remains challenging. Therefore, for treatment of deep-seated tumors, LSMO nanoparticles need to be surface-modified to evade the reticuloendothelial system and accumulate at tumor site. In the present study, Lanthanum Strontium Manganese Oxide nanoparticles (magnetic nanoparticles) were functionalized to enable intravenous administration and targeting to deep-seated tumors.
Methods: Bare LSMO nanoparticles were synthesized by citrate gel method, already established in our laboratory (Haghniaz et al, 2013). Next, LSMO nanoparticles were modified with a biocompatible polymer (PEG) and further functionalized with an active targeting moiety (Folic acid). The synthesized nanoparticles were characterized (FTIR, TGA, TEM, SEM, zeta potential analysis) for confirmation of surface functionalization. Further, heating potential of these surface functionalized LSMO nanoparticles was also studied.
Results: SEM analysis revealed that LSMO nanoparticles were 30 to 70 nm with spherical shape. FTIR, TGA analysis confirmed surface modification with PEG and folic acid. Further, functionalized LSMO nanoparticles exhibited RF induced heating, suggesting hyperthermia potential.

Poster: EPP1010

Pharmacophore Generation, 3D-QSAR Validation and Virtual Screening : Comparision of Type-I and Type-II Inhibitor of C-Met

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C-Met receptor tyrosine kinase considered as an vital target for anti-cancer agents. It shows the involovement in down regulation in many cellular processes. The conformational changes due to flip in the DFG motifs in the kinase domain leads to development into active and inactive, known as DFG-in and DFG-out conformations respectively. The active and inactive conformation is inhibited by type-I and type-II inhibitor respectively. The structurally, the type-I inhibitors are U-shaped curved molecule whereas type-II molecules are 5 atom distance side chain moeity. That makes the inhibitors to bind the different pockets on the c-Met receptor. Hence, there will be different binding modes in type-I and type-II inhibitors. The additional features required for the type-II inhibitors govern their selectivity. Since there are only two approved inhibitors for c-Met kinase there is a need for more screening and development studies for identification of newer inhibitors.

The present study made an attempt to showed the development and validation of pharmacophore on type-I and type-II inhibitors. The selection of pharmacophore model was based on the survival score, adjusted score, fitness score and inactive score. The validation of generated hypothesis done by Atom-based 3D-QSAR. The validated hypothesis subjected to screening using the commercially available databases and in-house databases.

Poster: EPP1011

Conjugated Combinational Solid lipid Nanoparticles Delivery loaded with Aorvastatin and Vinpocetine for the Treatment of Cancer

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The main objective of the present study was to formulate, optimize and characterize conjugated combinatorial solid lipid nanoparticles (SLNs) as a potential drug delivery system and assess its anti-tumor activity on MDA MB 231 human breast cancer cell lines. Atorvastatin Calcium (ATS) and Vinpocetine (VIN) display a major disadvantage of poor solubility and low bioavailability. The formulated combinatorial SLNs drug delivery system is expected to conquer these issues and enhance the therapeutic efficacy of both drugs. The SLNs were formulated by emulsification with high speed homogenization followed by probe sonication. Central composite design was selected for optimization. Drug: Lipid ratio, Surfactant: Co-Surfactant ratio and homogenization speed were considered as an independent variables i.e. critical process parameters (CPP) to check the effect on critical quality attributes (CQA) of SLNs i.e. particle size, percent entrapment efficiency (% EE) of both drugs, percent drug loading (% DL). The optimized SLNs formulations were characterized by transmission electron microscopy (TEM), X- ray diffraction (X-RD), in vitro drug release by dialysis bag method and stability studies. In vitro cyto toxicity was performed on MDA MB 231 cell line. The optimized formulation F3 showed a particle size of 435± 3 nm, poly dispersity index (PDI) 0.298 and Zeta potential (ZP) -37.1 with % EE 69.6± 1.3 and 68.98± 0.9 of ATS and VIN respectively. In vitro cell line study showed combinatorial SLNs formulation enhanced the anti-cancer activity of ATS and VIN on MDA MB 231 when compared with the active pharmaceutical ingredients. The results exhibited that the conjugated combinatorial SLNs formulation is effective, stable and had enhance activity against MDA MB 231 cell line.

Poster: EPP1012

5-10, Methylenetetrahydrofolate Reductase C677T Gene Polymorphism as Risk Factor in the Cases of Breast Cancer in India

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Breast cancer is one of the leading cause of mortality in women of India. Methylenetetrahydrofolate reductase (MTHFR) is important enzymes to regulate the folate metabolism during cell proliferation . Single nucleotide polymorphisms of MTHFR C677T gene mutation increase “risk factor” in the disease like breast cancer. Therefore, the study become essential to know the genetic susceptibility i.e. copy number variations and also to determine the genetic heterogeneicity using ARMS PCR based analysis in the cases of breast cancer patients belong to Bihar regions. We have also evaluate the level of estrogens and progesterone in the same cases to correlate endocrine disruption mechanism and how modulate genetic susceptibility during tumorigenesis. Blood samples were collected from pre clinically diagnosed case in EDTA (2ml) for isolation of genomic DNA and RT PCR based analysis. Epidemiological data such age, food habit including life style, smoking habits and use of contraceptive were also included to correlate with genetic profile with respect to controls. ARMS PCR using SYBR Green used for melting-point (Tm) analysis was part of strategy of our interest to detect SNP of mutant of MTHFR allele (wild type and mutant alleles) and also the same PCR product further confirmed by agarose gel electrophoresis. The percentage frequency of MTHFR gene C677T are CC-75% ,CT-16.33% , TT -8.3 % .Interestingly, our findings confirm the role of MTHFR C677T gene polymorphisms and to increase the risk factor of the disease and genetic susceptibility in Bihar population. However, our study is still continue further to correlate with glutathione S transferase gene polymorphism to find cellular susceptibility as antioxidant marker in women having high risk of the disease.

Poster: EPP1013

Integration of Extract of Anticancer Plant with Magnetic Iron Oxide Nanoparticles for Cancer Treatment

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As per a survey conducted and published by Sunil Rajpal, et al, cancer was reported to be emerging as a major public health concern in India. It was found that expenditure on cancer treatment is among the highest for any ailment. Herbal remedies gaining attention because herbals contain potential natural active compound that can support the human health without intense side effects. Many plant extracts owing to their antioxidant properties, become responsible for anticancer effects as well as cause formation of nanoparticles. Such green synthesis of nanoparticles provided benefits over chemical and physical method of formulation of nanoparticles as it was cost effective, environment friendly, no harsh procedures such as use of high pressure, temperature and most of all they were better tolerated by the patients. Iron oxide nanoparticles exhibited many biomedical applications owing to biocompatibility, high saturation magnetization and low toxicity. They were the only nanoparticles that are approved by Food and Drug Administration for clinical use. Keeping expenses of cancer therapy and sufferings of patients in mind, integration of extract of anticancer plant to formulate iron oxide nanoparticles was undertaken for investigation as possible anticancer treatment. Four Plant extracts (which were reported to be anticancer) were being investigated to form iron oxide nanoparticles. It was observed that nanoparticles formed were smaller in size and stable as compared to nanoparticles formed by one of the physicochemical methods.

Poster: EPP1014

Development and Evaluation of Polymeric Nanofibres Via Electrospinning Process for the Sustain Delivery of Anti Tumor Drug in the Cerebral Cavity

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Nanomedicine promises to solve major healthcare challenges in anticancer therapy. The key complications of nanomedicine are their tumour reoccurrence, biocompatibility, drug loading, short circulation time, chances of drug resistance, etc. Nanomedicine has provided new avenues with improvised and innovative technology such as a degradable delivery device that provides targeted and sustain chemotherapeutic agents to the target site for the treatment of tumor. Electrospinning has received increasing interest and attention in recent years for fabricating micro/nanofibers of various materials due to its versatility and capability of drug delivery system (DDS) for delivery of anti tumor drug in the cerebral cavity for an effective treatment in Glioblastoma tumors.

Among various methods for preparation of nanofibres, electrospinning was adopted in present work. PLGA was selected as the polymeric solid dispersion matrix for the drug due to its various advantageous properties. To achieve this goal, the drugs loaded nanofibres and polymeric nanofibres were loaded separately prepared and compared. The as-prepared formulations of drug loaded nanofibers were well-characterized by different techniques such as by AFM, SEM, TEM analysis, dug release, in-vitro and cytotoxicity of nanofibers was evaluated by MTT assay in U87 MG Brain tumor cell line.

Our finding clearly explains that the polymeric nanofibres are having high drug loading and releasing efficiency. And results obtained in vitro reveals adopting drug eluting nanofibres may result in sustain delivery of anti tumor drug in the cerebral cavity. Additionally drug loaded nanofibres shows better therapeutic efficacy against U87 MG Brain tumor cell line which shows remarkably improved therapeutic potential of the drug.

Poster: EPP1015

Serum Associated Factors Alter DNA Damage Response and Induce Proliferation

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Introduction: Obesity and cancer are modern world's prominent health concern. The significant population is under the grip of these diseases. According to GLOBOCAN report 2018, colorectal cancer is third most prevalent cancer worldwide and 1.8 million new colorectal cancer cases were reported. In this report most influential factors were dietary patterns, obesity and lifestyle. Among these factors, obesity by itself can increase risk for colorectal cancer occurrence by 1.5-2 folds. Chronic inflammation, oxidative stress and elevated levels of factors like adipokine, glucose, cholesterol etc. in obese individuals creates imbalance in DNA Damage Response (DDR) and cell cycle regulation therefore can contribute to carcinogenesis.
Methods: C57BL6/J male mice were divided in two groups, one group was fed with normal diet (ND) and another group was fed with high fat diet (HFD). After significant differences in serum parameters (triglyceride, cholesterol, glucose), and weight, blood was collected from these mice and serum was separated. For in vitro experiments CT26 (mouse colon cancer cell line) and MC38 (mouse colon cancer cell line) were used. After Cell adherence to culture dishes, cells were serum starved for 12 hr. and then cultured in ND and HFD serum. For cell proliferation, MTT, FACs, colony formation assays were performed. For DDR analysis immunoblot and immunofluorescence were done.
Results: High Fat Diet intake significantly increased serum biochemical parameters (triglyceride, cholesterol, glucose) and weight of C57BL6/J male mice. CT26 cells were proliferating rapidly in obese serum, decrease in ratio of cells (G0G1/s) suggest more number of cells in S phase, which was confirmed by increase in level of PCNA. No differences in proliferation of MC38 cells cultured in ND and HFD serum was observed. Also, double stranded DNA damage marker protein pH2AX level is increased in CT26 cells when cultured in HFD serum, indicating increased DNA damage. Alteration in the level of DDR molecules such as P53 and BRCA1 was detected in CT26 cells cultured in HFD serum compared to ND serum. Simultaneously, obese serum also induced oxidative stress in CT26 and MC38 cells. These results suggest that the effect of obese serum exhibits cell type dependency.

Poster: EPP1016

To study the pattern of Adverse Drug Reactions (ADRs) Of Antiretroviral Drugs in AIDS Patients Attending ART outpatient department in A Tertiary Care Hospital - A Prospective Observational Study

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Background: HAART (Highly Active Anti-Retroviral Therapy) is fraught with a high risk of adverse drug reactions (ADRs) and consistent use is required to prevent viral drug resistance and meet treatment goals. A high percentage of ADRs deter the patients from taking regular medication, and drug withdrawal or discontinuation results in treatment failures. Unfortunately, Upto 25% of patients discontinue their initial HAART regimen because of toxic effects, noncompliance or treatment failure within the rest 8 months of therapy. Continuous evaluation needs to be done for the benefit of ART (Anti-Retroviral Therapy) help to achieve the ultimate goal of making safer and more effective treatment to the patients.
Methodology: We assessed 250 prescriptions of patients attending ART OPD (OutPatient Department) in our hospital set up after Ethical and MDACS (Mumbai District AIDS Control Society) approval. The data related to drug reactions and relevant investigations were collected to study the incidence, prevalence, most and least common drug reaction.
Result: Out of 250 prescriptions, drug reactions were observed in 108 prescriptions (43.2%). Most commonly affected patients were males, especially in the age group of 31-40 years. Majority of the patients belongs to the upper lower class (as per modified kuppuswamy scale). The most common reaction observed was anaemia in 44.4% patients caused due to Zidovudine (NRTI – Nucleoside Reverse Transcriptase Inhibitor) and the least common was lipodystrophy in 2 % patients due to Stavudine (NRTI). The drugs causing the reactions were stopped and withdrawn from the regimen given to the patient.

Poster: EPP1017

To Study the Awareness About Vaccination Among Medical Students of a Tertiary Care Hospital – A 'KAP' Study

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Background: Immunization is one of the most cost-effective interventions to prevent the diseases and improve life expectancy. Immunization program is one of the key interventions for protection of children from life threatening conditions, which are preventable and it is a major public health intervention in the country. Immunization Program in India was introduced in 1978 as Expanded Program of Immunization (EPI). The development and use of immunizations against infectious agents have been important and successful steps toward disease prevention. Immunization is a mass means of controlling the spread of infectious diseases by using vaccines, immunoglobulins, antisera, and so on.

Methodology: The study was a prospective, cross sectional and single centered study, conducted at a tertiary care hospital. The study was conducted over a period of 2 months (April 2019 – May 2019) after obtaining permission from the Institutional Ethics Committee. The designed questionnaire was distributed among 200 MBBS students (1st year – 4th year) who were willing to participate in the study to assess the participants Knowledge, Attitude and Practice regarding National Immunization Schedule. The data collected compiled in excel sheet was analyzed statistically for calculating mean and standard deviation.

Results: 200 students participated in the study. Regarding knowledge meager response was obtained. Around 40% of the students had the insight regarding route of administration of the vaccines. Preponderance of students thought the purpose of vaccines was to prevent illness. The knowledge regarding the pentavalent vaccine assessed was found correct in 34.82% of the students. Only 41.29% of the students thought that all the vaccines should be given irrespective of any gender, while 30% students believed rubella vaccine not to be administered in boys. Regarding the attitude , students thought the combined effects of the vaccines would be effective and should be recommended were about 61.19%. Awareness followed by affordability were inferred to be the major set back for low immunization status. Regarding the practice, 56.72% of the students believes not to vaccinate a sick baby. About 79.1% of the students told that they have motivated other people about immunization.

Poster: EPP1018

Early Diagnosis of Breast Cancer: Based on Proteomics Analysis using MALDI-TOF

Presenting Author: Aniket K
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Breast cancer (BC) is the most common malignancy of Indian women and 15% to 25% leading cause of death every year. Early diagnosis of cancer is of pivotal importance to reduce disease-related mortality. There is great need for non-invasive screening methods, yet current screening protocols have limited sensitivity and specificity. Mass spectrometry based proteomics is widely applied as a technology for mapping and identifying peptides and proteins in body fluids. One commonly used approach in proteomics is peptide and protein profiling. Genomics has a long history in biomarker discovery. Genomic approaches include the detection of risk-associated genetic or allelic variants. One of the best-known examples is the assessment of specific, inherited mutations in the *BRCA1* and *BRCA2* genes, which are associated with an increased risk for female breast cancers. Plasma and tissue samples, which are generally accepted due to the minimally invasive way in which they are obtained and their routine use in the clinic, are most commonly used for such studies. In the MALDI-TOF soft-ionization approach, a sample is co-crystallised with an energy-absorbing matrix. Selected proper matrix is critical as allow analysis of particular spectra of biomolecules to eliminate false identification of peptides with only a single-residue substitution giving improved identification of protein variants, such as single amino acid variant (SAAV) peptides. These data provided evidence for the translation of pseudogenes, short ORFs, alternative ORFs, N-terminal extensions, and intronic sequences and demonstrated that protein production from pseudogenes . With the current high throughput technologies in the past few years whereas, integration of proteomics and bioinformatics which help in data processing and analysis while more data repositories and resources have become publicly available (such as ProteomXchange, PRIDE, neXtProt, Proteom Db etc) for analysis will clearly accelerate the discovery of new cancer biomarkers and enabled more accurate diagnosis and prognosis.

Poster: EPP1019

Genetic and Stem Cell Interaction in the Cases of Wilm's Tumor

Presenting Author: Aprajita

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Wilim's tumor (WT) is one of the rare tumor groups in pediatric age in India. Genetic and epigenetic factors including low socioeconomic status, poor health sector and consanguinity marriages play a crucial role in determining the "risk factor". The etiopathology of WT is highly complex and involving high risk of developing congenital anomalies during tumorigenesis. Therefore the major aim is to determine the polymorphism of MTHFR allele (C677T) and to study of stem cell pluripotent markers OCT4, SOX2 and NANOG in the cases of WT. Genomic DNA was isolated from the blood samples of the WT cases and controls, quantified by Nanodrop spectrophotometer followed by RT- PCR analysis with specific set of primers both for MTHFR C677T allele and stem cell (Sox2,Oct4 ,Nanog) markers. Interesting findings reveals increase frequency (> 25%) of CT alleles of MTHR gene due to shifting of *Tm* values from CC allele (82.0) to 82.80 (CT allele) , showing appearance of extra band of 105bp on Agarose (3%) gel electrophoresis stained by ethidium bromide. Stem cells findings reveals that maximum gene expression was observed in NANOG, while down regulation was observed in SOX 2. OCT 4 expression showing lack of significant difference with respect to controls. These genetics and stem cell findings confirm that MTHFR increase "risk factor" and stem cell fail to maintain pluripotency during embryonic development resulting onset of WT.

Poster: EPP1020

Beneficial Effect of Racemic CIQ Against 6-OHDA Induced Motor Deficits in Mice

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Background: Recently, CIQ has been identified as a positive allosteric modulator of the GluN2C or GluN2D subunits of NMDA receptors. (Santangelo Freel et al., 2014). Its neuroprotective potential has been reported in prepulse inhibition and working memory impairment (Suryavanshi et al., 2009). In present study, effect of (±) CIQ on motor effects was investigated in 6-OHDA lesioned mice..

Materials and Methods: Adult male Swiss albino mice (20-25g) were treated either with 6-OHDA (2µg/µl) or vehicle/CIQ bilaterally into dorsal striatum. Two weeks after recovery, the separate group of 6-OHDA treated and control group received ±CIQ, (20 and 40 mM/mice, i.c.v.) and 15 min thereafter locomotion and stereotypy was assessed using open field test (OFT) (Taksande et al., 2009). Animals were perfused with PBS and striatal dopamine level was measured by high-performance liquid chromatography (HPLC) (Thi et al., 2008).

Results: We found that (±) CIQ at 20 and 40mM shows significant improvement in locomotion ($P<0.01$ and $P<0.0001$ respectively) as compared with vehicle treated 6-OHDA lesioned mice. Additionally, (±) CIQ at 20 ($P<0.01$) and at 40mM ($P<0.001$) shows significant decrease in stereotypy. Moreover, striatal dopamine level get improved after (±) CIQ at 20 and 40mM treatment ($P<0.01$ and $P<0.0001$ respectively) in 6-OHDA lesioned mice.

Poster: EPP1021

Mixed Method Analysis Of Mobile Screening Clinic for Cancer in a Tribal Community of Maharashtra.

Presenting Author: Dr. Bhanupriya Pande

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Objectives: 1. To assess the sociodemographic profile and spectrum of morbidity of camp beneficiaries. **2.** Assess expectations and satisfaction perceived by community and organizers from health camps. **3.** Gain practical insights from the camp event to advocate participation-friendly policies in the community.

Material and methods: A cross sectional mixed study was conducted. A semi structured interview of 128 beneficiaries and 2 focus group discussion followed by in depth interviews of 11 service providers was done.

Results: The camps were attended by 52.7% of females and 36.7% of males as beneficiaries. 12 females were screened positive for breast cancer and 22 males along with 7 females screened positive for oral cancers were referred to higher centre. FGDs and IDIs revealed two major themes – expectation and satisfaction and several subthemes.

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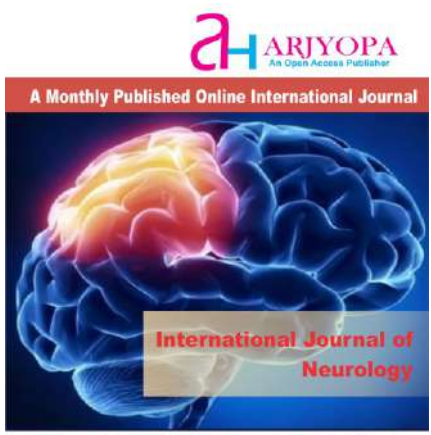

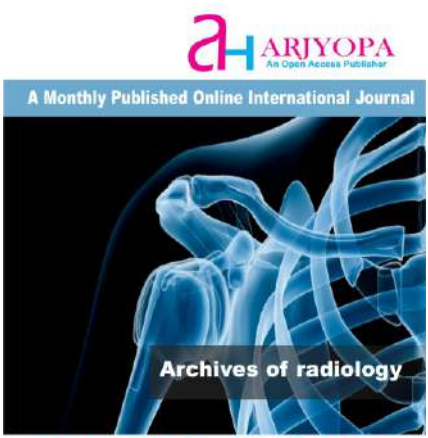

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