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INDO ONCOLOGY

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Bioleagues worldwide Conference

3rd Indo oncology summit-21

September-2021

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3rd INDO ONCOLOGY SUMMIT-21

24th, 25th to 26th September 2021 | Virtual Conference

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INDO ONCOLOGY

3RD INDO ONCOLOGY SUMMIT

"Research & Innovation in Oncology: Connecting the Dots"

24th, 25th & 26th September, 2021

Virtual Conference

Organized by:

International Association of Oncology

INTERNATIONAL ASSOCIATION OF ONCOLOGY

Sparsh Hospitals & Critical Care (p) Ltd.

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PREFACE

This book reports the Proceedings of the "***3rd Indo Oncology Summit 2021"*** held *on* ***September 24th-26th, 2021*** organized by ***BioLEAGUES Worldwide & Sparsh Hospital and Critical Care***.

The publishing department has accepted more than 40 abstracts. After an initial review of the submitted abstracts, 29 papers were presented at the conference and were accepted for publication in the Conference Proceedings. The topics that are covered in the conference include Cancer Epidemiology, Cancer pharmacology, Pediatric oncology, Neuro oncology, Oncology Nursing and Palliative care, Cancer Drugs and Vaccines, Innovations in cancer research and Oncology, Diagnostics, nanotechnology, Medical Oncology, Clinical Oncology, Robotic Oncology, Cancer Treatment & Therapies etc. We would like to thank all the participants for their contributions to the conference and the proceedings.

Reviewing papers of the **3rd Indo Oncology Summit 2021** was a challenging process that relies on the good will of those people involved in the field. We invited more than 15 researchers from related fields to review papers for the presentation and the publication in the **3rd Indo Oncology Summit 2021** Proceeding. We would like to thank all the reviewers for their time and effort in reviewing the documents.

Finally, we would like to thank all the proceeding team members who with much dedication have given their constant support and priceless time to bring out the proceedings in a grand and successful manner. I am sure this **3rd Indo Oncology Summit 2021** will be a credit to a large group of people, and each one of us should be proud of its successful outcome.

3rd Indo Oncology Summit 2021

From BioLEAGUES Director's Desk...

On behalf of **BioLEAGUES Worldwide**, I am delighted to welcome all the delegates and participants around the globe to the ***"3rd Indo Oncology Summit 2021"*** which is going to be held on **24th to 26th September, 2021.**

This conference will revolve around the theme ***" Research & Innovation in Oncology: Connecting the Dots".***

It will be a great pleasure to join with Doctor, Research Scholars and physicians all around the globe. You are invited to be stimulated and enriched by the latest innovations in all the aspects of Oncology while delving into presentations surrounding transformative advances provided by a variety of disciplines.

I congratulate the Chairperson, Organizing Secretary, Committee Members, coordinator BioLEAGUES and all the people involved for their efforts in organizing the **3rd Indo Oncology Summit-2021** and successfully conducting the International Conference and wish all the delegates and participants a very pleasant conference.

A. Siddth Kumar Chhajer

Director, BioLEAGUES Worldwide

From Indo Oncology Organizing Secretary...

Dear Colleagues & Fellow Researchers,

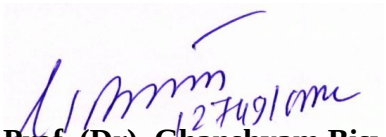
After the great success of Indo-Oncology Summit in the years 2018 and 2019. It is my immense pleasure to welcome you all to the 3rd Indo-Oncology Summit which is scheduled during September 25th, 26th & 27th 2021 Live on ZOOM with FREE registration to all healthcare providers.

Keeping in consideration of safety during the outbreak of novel corona virus in 2020, we had collaborated with several reputed oncologists across India and spread the awareness of cancer through webinars. As a healthcare professional and responsible citizen, we ensured that each and everyone stayed at home safe by extending the 3rd IOS 2021.

After the successful survival in the pandemic. This year International Association of Oncology will be discussing on the Research & Innovation in Clinical & Medical Oncology at this platform. It will be a platform of Oncologists, Scientists, Researchers and Other allied healthcare professionals from across the globe sharing their expertise.

Looking forward to each one of your contribution to make the 3rd Indo-Oncology Summit a grand success.

Let us break the chains and join hands to make a cancer free nation!



Prof. (Dr). Ghanshyam Biswas

Organizing Secretary | Indo Oncology 2021
Executive Director, Sparsh Hospital
Consultant Medical Oncology

From BioLEAGUES CEO's Desk...

It is indeed a privilege to acknowledge and thank all the supporters and organizers of the **"*3rd Indo Oncology Summit 2021*",** who contributed greatly to organize the conference successfully.

I would like to acknowledge and thank the Chief Guest for his/her valuable contribution in the ***3rd Indo Oncology Summit 2021.***

My special thanks to all of our Special Guests who so graciously accepted our invitation to participate in the conference. I also wish to acknowledge and thank the sponsors of the conference whose financial support was extremely grateful.

I would like to specially thank our Advisory Committee Members from various Organization whose continuous support have helped us plan and execute the conference successfully.

I am highly indebted to the contribution given by all the Scientists, Doctors, Research Scholars, physicians sand students to the conference.

Dr. Rudra Bhanu Satphaty

CEO, BioLEAGUES Worldwide

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To Evaluate Whether Epidermal Growth Factor Receptor is an Independent Prognostic Marker in Oral Squamous Cell Carcinoma – A Prospective Cohort Study

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Consultant Oral & Maxillofacial Surgeon, Indore, India

Abstract:

Around 90% of all oral cancers are squamous cell carcinomas. The overall survival of these patients in below 50%. A non-invasive marker to predict the prognosis is solely required. The Epidermal Growth Factor (EGF) and its Receptor (EGFR, ErbB-1, or HER-1) were not only shown to play an influential and critical role in cellular growth and differentiation in healthy tissues, but also in tumorigenesis and the progression of malignant disease.

Aim: To find whether there Epidermal Growth Factor Receptor expression affecting the prognosis in oral squamous cell carcinomas is an independent prognostic marker.

Materials & Methods: A prospective cohort study was performed in 25 patients with biopsy proven oral squamous cell carcinoma who presented to our hospital from July 2017 to June 2019. The data collected from their report were pTNM staging, surgical margins (anterior, posterior, superior and inferior), nodal status and scoring of EGFR expression was done.

Result: EGFR showed a statistically significant p value 0.002 as independent prognostic marker with sensitivity of 97.7% and specificity of 61.2%.

Conclusion: This study concludes that EGFR is an independent prognostic marker and must be done in advanced oral squamous cell carcinomas for the need for addition of anti-EGFR agents in adjuvant treatment.

Keywords:

oral squamous cell carcinomas, prognosis, Epidermal Growth Factor receptor expression

Comparison of Carbohydrate and Protein Diets in Small Instestine Cancer Patients

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Abstract:

Small intestine cancer is a type of neoplasm that is rare. This neoplasm is only 1% of gastrointestinal malignant. Cancer can interfere with various metabolic processes in the body. This research was carried out in three stages, namely induction, nutrition, and surgery. The object mices used were 12 groups of 4 weeks and 6 weeks as many as 12. The induction process is carried out continuously three times. Each group of object mices was given carbohydrate and protein nutrients varied. The results showed significant differences based on changes in behavior changes, feces color, anatomical pathology of internal organs, and the number of cancer cell nodules. Behavior changes can be caused by metabolic changes in cancer cells; abnormal color changes in the feces of object mices can be caused by a disruption in the hepatobiliary system and gastrointestinal bleeding; discoloration of internal organs and accumulation of fat can be caused by inflammatory reactions, necrosis (hemorrhage and non-hemorrhage), and disturbances during the breakdown of fat in the body; and the difference in the number of nodules in each group could depend on the intensity of DMBA induction, nutrition, and the length of time the object mouse was maintained.

Keywords:

Carbohydrates, DMBA, Metabolism, Protein, Small Intestine Cancer

In-Silico Drug Design and Docking Studies of Small-Molecule Inhibitors against the Immune-Checkpoint Protein PD-L1

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Abstract:

Immunotherapy has been revealed as a crucial pillar in the therapy of different cancers such as head-and-neck cancer, pancreatic cancer, breast cancer, among others. However, the therapy is expensive and cannot be afforded by every patient. However, there is potential for targeting the immune checkpoint proteins that have been previously targeted using monoclonal antibodies, using small molecule inhibitors. In the present study, the immune checkpoint protein PD-L1 (Programmed Death Ligand-1) was targeted for in-silico design of drugs. The hits were screened using the similarity search approach and the leads were identified using docking studies with autodock Vina. ADMET analysis was carried out to analyze the drug-likelihood of the lead compounds. The study identified ten promising leads of which, two drugs showed good drug-likeness and high binding affinity with PD-L1.

Keywords:

ADMET, Anticancer, Autodock, Immune checkpoint, *in-silico*, PD-L1

AgNOR Dots – A Screening and Monitoring Tool in Oral Cancers

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Abstract:

Nuclear organizer region are nucleolar components containing a set of argyrophilic proteins which contain ribosomal genes which are selectively stained by silver methods. After silver staining the NORs are identified as black dots in the entire nucleolar area and these stained areas are called AgNORs. In cancer tissues the expression of AgNOR protein has been found to be strictly related to the cell duplication rate. Several studies have been done in different tumour types which demonstrated that malignant cells frequently show greater AgNOR protein compared to that of non malignant cells. The clinical appearance of lesion takes a longer time, so to diagnose whether there is cellular alteration happening before the actual lesion appears and to segregate lesion showing dysplastic changes from those which doesn't. A simple and cost effective technique was deviced where in buccal smears from subjects using smokeless and smoking form of tobacco along with normal healthy subjects were collected and stained with AgNOR staining and the prolifertive index of oral epithelial cells in corresponding groups were analysed. The outcome of study will be if the results are promising, they can be employed in mass screening, regular follow of cancerous lesions and only in required lesions biopsy can be performed.

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An Observational Study to Assess the Effectiveness of Okoubaka Aubrevillei 6C in the Treatment of Gastrointestinal Symptoms Occurring in Patients after Chemotherapy

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Abstract:

Incidence of cancer in India is only half the global incidence. But because of the sheer size of population, the incidence comes to 1.1 million patients. Though the incidence is lower than the High-Income countries, cancer survival is poorer in India. The percentage of 5 year survival in India after diagnosis is only half the survival rate in rich countries. Despite these setbacks, India has a couple of innovative models in early detection and palliative care to offer to the rest of the world.[1]
In a study in France, the homoeopathic medicine *Okoubaka aubrevillei* has been used in the treatment of the side effects of chemotherapy and the results were found to be positive. Hence this study is taken up to observe the effectiveness of *Okoubak aaubrevillei 6c* in the treatment of gastrointestinal symptoms occurring in patients after chemotherapy.[2]
Objective: To study the effect of *Okoubaka aubrevillei 6c* on Gastrointestinal symptoms in patients after chemotherapy by using Structured Assessment of Gastrointestinal system measuring scale (SAGIS).
Methods: This was a quasi – experimental, prospective study with an evaluation before and after the treatment without control design. Patients receiving chemotherapy with gastrointestinal symptoms were selected for the study, as per the inclusion criteria. After consent from the patients, their case was taken in detail and they were prescribed *Okoubaka aubrevillei* 6C three times a day for a period of 1 month. The cases were analyzed using Structured Assessment of Gastrointestinal system measuring scale (SAGIS), during detailed case taking and also at the end of the study. The hypothesis was statistically analyzed using paired ‘t’ test.
Results: The measured ‘p’ value for all the parameters was 0.000, which is less than 0.01 that denotes a high significant reduction in post chemotherapy gastrointestinal symptoms after *Okoubaka aubrevillei* 6C.
Conclusion: Thus, the study convincingly proves that *Okoubaka aubrevillei* 6C is effective in reducing the gastrointestinal symptoms in patients receiving chemotherapy.

Keywords:

Chemotherapy/Gastrointetsinal Symptoms/*Okoubaka aubrevillei*

Green Synthesis of ZnO Nanoparticles using Agnuside Isolated from Vitex Negundo- Characterization and Evaluation of Anti-Cancer Activity

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Abstract:

Incorporation of nanotechnology to the field of biology has become the popular approach in the field of medical science due to nanoscale properties that can be fine-tuned to treat various diseases. Most of the population especially those living in the rural and tribal areas depend mostly on the medicinal plants for curing various diseases. One such plant with high medicinal value is Vitex negundo (Sanskrit: 'nirgundi'). The aim of present study is to isolate agnuside and evaluate anticancer activity by in silico and in vitro method. Agnuside was isolated by column chromatography from ethyl acetate fractionation of methanol extract of leaves of Vitex negundo. Zinc oxide nanoparticles were biosynthesized using Agnuside isolated from Vitex negundo leaf extract. The synthesized nanoparticles are characterized using XRD, SEM, EDX, UV-Visible spectroscopy, FTIR. XRD analysis exhibited the crystalline nature of ZnO nanoparticles. SEM spectroscopic studies exhibited that ZnO NPs were hexagon shaped and between the size range 30-40 nm. EDX spectrum confirmed the presence of zinc and oxygen in the synthesized nanoparticles. The UV-vis spectrum revealed absorption spectra at 235nm that confirmed the presence of ZnO nanoparticle. In vitro anticancer activity was done using colon cancer cell lines by MTT assay at different concentrations & in silico docking studies using enzyme EGFR tyrosine kinase. Agnuside was subjected to molecular docking studies for the inhibition of EGFR tyrosine kinase enzyme, a major target for inhibition of cancer cells. Agnuside has shown to possess anticancer activity both in vitro and in silico studies.

Keywords:

In silico studies, *In vitro* anticancer activity, *Vitex negundo,* ZnO nanoparticles, Characterisation, MTT assay

Use of a Digital Platform to Effectively Capture Patient Data and Utilize to Generate Reports and Charts in Real Time for Better Treatment Outcomes

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Abstract:

Cancer is a disease that is on the rise. This field has seen significant growth in treatment options in last few years making precision medicine and personalized medicine the way of the future. There is more to be done in terms of effectively capturing end to end data and using the data efficiently for areas such as clinical treatment decision making. Physician scientists who want to readily analyze their patient population for relevant hypothesis can use a system that captures data and analyses it in real time.

To build a customized digital platform that effectively captures end to end patient data and analyses the data live to aid in clinical decision making, ultimately benefitting the patients.

- Development of user-friendly quality web platforms with built-in tools for automated statistical reports and analysis will facilitate health outcomes research by physician scientists.
- Efficient Data capture that ensures data quality of highest levels. With minimum data works, this platform can be used to generate real time reports that will aid quick and informed decision making.
- Our customizable web-platform can be used in any hospital or clinic for a reasonable cost, time and effort.

Management of Krukenberg Tumors Arising from a Colonic Carcinoma: About 3 Cases and Literature Review

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Abstract:

Introduction: Colorectal Cancer (CRC) most commonly metastasizes to the liver and lung. Ovarian localization or Krukenberg Tumor (KT), extremely rare, was reported in 3 to 14% of women with CRC. It is related to severe prognosis due to its aggressiveness, diagnostic difficulties and poor treatment efficacy.

Materials and Methods: we reported 3 cases of KTs treated in the medical oncology department, Fattouma Bourguiba hospital, Monastir, Tunisia between 2012 and 2015.

Results: 3 women with 2 at premenopausal status.The median age at diagnosis was 48 years (41-52). The main reason for consultation was a change of bowl habits or stool character (n=2). It was an adenocarcinoma predominant in the sigmoid colon (n=2) stage II (n=2) and IV (n=1) with wild-type RAS status (n=2). The mean tumor size was 5 cm (5-7). Bilatéral ovarian metastases revealed diagnosis (n=1), this patient had Bilateral Salpingo-Oophorectomy, Palliative Chemotherapy (CT) (FOLFIRI) and 5 CETUXIMAB injections with pulmonary, hepatic and peritoneal progression at evaluation, hence a CT 2nd line (FOLFOX) was performed.Two patients had a subtotal colectomy with ileorectal anastomosis followed by CT (Xéloda), a metachronous ovarian metastasis occurred after a mean time of 17 months for which they had cytoreductive surgery with R2 margins,they were given concomitant adjuvant CT-radiotherapy. After a mean follow-up of 29 months, the first patient is dead of the disease, the 2nd was alive and symptom-free and the 3rd presented a progressive disease with pulmonary and hepatic metastases, he underwent a 2nd line CT and died after 4 months.

Conclusion: Our results confirm the fatal prognosis of KTs, which poses a real challenge for practitioners.Therefore, a systematic ovaries exploration in any digestive neoplasia appears necessary. Prospective studies are needed to set a therapeutic approach for KTs in the hope of improving the survival rate.

Novel Nanovesicular Systems for the Management of Skin Cancer

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Abstract:

Skin cancer initiates from the skin due to irregular growth of abnormal cells. Skin cancer cells are capable of spreading and invading the other parts of body. Over the past several decades the frequency of non-melanoma and melanoma, which are the major types of skin cancer, has increased.
Ultraviolet radiations (UV) are the main causative agent for skin cancer. UV exposure can inactivate tumor suppressor genes while activating various oncogenes. Surgical removal, chemotherapy and radiation therapy are the conventional techniques that lack the potential for targeting cancer cells and harm the normal cells. However, the novel therapeutics show promising improvements in effectiveness of treatment, survival rates and better quality of life for patients.
For delivering the active ingredients to the target sites different methodologies are involved in the skin cancer therapeutics. Nano carriers being very efficient in penetrating into the tumor cells and they have the ability to improve the stability of drugs. The present work majorly focuses on hallmarks of different types of skin cancer, evaluation of biomarkers to establish the severity and therapeutic response, and novel targeted therapies for the management of skin cancer. A summary of pertinent, peer-reviewed English literature from databases like EBM, EMBASE, MEDLINE from 2010 to 2021 was used.

In-vitro Evaluation of Anticancer Activity of L-Amino Acid Oxidase from *Crotalus Atrox*

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Abstract:

Though snake venoms are deadly toxins, research reveals that they are treasure house of enzymatic and non-enzymatic peptides and proteins that are biologically and pharmacologically important with tremendous therapeutic potential. In this context, we evaluated anticancer potential of L-Amino Acid Oxidases (LAAO) from the venom of western diamond back rattle snake (*Crotalus atrox)* on human breast cancer cell line (MDA-MB-231). Preliminary cytotoxicity assays confirmed concentration dependent cytotoxic effect with an IC50 value of 8.98 µg/ml, suggesting the anticancer potential of LAAO from *Crotalus atrox*. Significant induction of apoptosis is exhibited by LAAO from *Crotalus atrox* in Annexin V-FITC apoptosis assay and the effect is further confirmed by TBARs assay. Effect of LAAO from *Crotalus atrox* on cell cycle was evaluated by flow cytometric analysis using propidium iodide and found that LAAO from *Crotalus atrox* significantly arrested the cell cycle at G0/G1phase. Further clarification with animal studies, toxicity as well as pharmacokinetic studies may help to confirm the chemotherapeutic potential of the compound.

Keywords:

Snake venom, L-amino acid oxidases,*Crotalus atrox*,Flow cytometry

In Vitro & Vivo Studies to Investigate the Therapeutic Approach of Editing the p53 Gene of Some Human Cancers through the CRISPR-Cas9 Technology

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Osmania University, India

Abstract:

The aim of the proposal is to develop enhance the apoptosis process in treating Non-functional p53 gene in tumor cells. It can done possible to do with isotopes which can emits radiations and also can remove nonfunctional p53 gene by CRISPR-cas9 activity can replace the nonfunctional p53 with phosphorylated functional p53 by extracting it from chromosome 17th and clone the gene by using rDNA technology methods (PCR techniques)the introduced cloned p53 at the site of chromosomal 17th will translated onto mRNA and transcribed into protein often express in cells with DNA damage .expression of this introduced Protein results in inhibition of cell division or apoptosis, both of which would keep the damaged cell from becoming a tumor cell. Hence p53 gene is a tumor suppresser gene and also inhibition of cell proliferation can done by check points which arrest the cell at G1 phase. So our goal is successfully we have to do deleted the mutated p53 gene and add the new functional p53 in vitro and in vivo studies

According to this research may be enhance the apoptosis process more in tumor cells, by introducing isolated cloned p53 gene into tumor cells by Crisper case technique, so the mutated gene is removed out if adding new p53 at the target sequence the cell become a normal like other cell there is no chance to proliferating or growth of tumor cell.

Management of Pancreatic Carcinoma: Epidemioclinical Study and Therapeutic Results

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Abstract:

Introduction: Pancreatic Carcinoma (PC) is a lethal disease. Due to the late diagnosis, only 10% of patients are accessible to surgical excision, which remains the only potentially curative treatment.
Materials and Methods: We reported 32 patients with PC treated in the medical oncology department, Fattouma Bourguiba hospital, Monastir, Tunisia between 2012 and 2019.
Results: The median age at diagnosis was 58 years (34-89) with a sex ratio of 2.The main reason for consultation was an abdominal pain (93.8%).It was an adenocarcinoma localized in the pancreatic body and tail (58.1%). Twenty-two patients presented with metastatic disease,mostly in the liver (50%),of which 17 had received 1st line Palliative Chemotherapy (CT) and only 2 cases had a 2nd line CT (FOLFIRI).Eight patients were with locally advanced disease, they received induction CT with progression at evaluation, of which 1 had palliative surgery and only 1 had palliative CT (LV5FU2-CDDP). Two patients were with early stage disease, they had undergone curative surgery (splenopancreatectomy) with negative margins (R0) followed by Gemcitabine CT and they were in complete remission.
After a median follow-up of 4 months (1-32), 27 patients were dead, 2 were in complete remission and 3 in progression.The overall survival in 1 year was 21%.
Conclusion: PC is one of the most aggressive cancers. Despite the poor prognosis, surgical resection tends to improve survival. Indeed and in accordance with the results of our series, complete resection (R0) is associated with better survival.

Ayurveda and Plant-based Medicines for Cancer Management: A Systematic Review

Dr. Sunil Hariram Pal
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Abstract:

A resurgence of interest in *Ayurveda*, other traditional systems of medication, and complementary and practice of medication has resulted from the preference of the varied consumers for products of natural origin. The potential benefits of plant-based medicines could also be their high acceptance by patients, and efficacy and safety. The foremost prevalent users of traditional medicine are individuals who have refractory conditions and nonlife-threatening conditions which might be chronic viz. neurological disorders, arthritis, etc. The second-largest group of users is those combating chronic, potentially life-threatening diseases, like cancer and human immunodeficiency virus/acquired immunodeficiency syndrome, etc. Both groups communicate *Ayurveda* and traditional system of drugs for a ramification of reasons, like management because the foremost treatment option and improved immune functioning, overall functioning, and quality-of-life (QoL) by managing side effects from conventional therapies, and to alleviate symptoms associated with their illness. The upsurge in use of traditional system among cancer patients warrants evidence of safety and effectiveness for these interventions as concomitant to traditional cancer therapy.

Molecular Modeling Study of Anti-Tumour Molecules from Veratrum Dahuricum with ErbB Receptor EGFR Tyrosine Kinase Domain in High-Grade Glioma

Meenakshi Saravanan
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Abstract:

Malignant gliomas, are the most common primary intracranial brain tumors in adults and are among the deadliest of human cancers because they are highly invasive and neurologically destructive. The most common genetic aberration associated with malignant glioma is amplification of the Epidermal Growth Factor receptor (EGFR, also referred to as ERBB1 or HER1), with a frequency of about 50%. The ErbB receptor family of tyrosine kinases comprises four members: Epidermal Growth Factor receptor (EGFR/ErbB1/HER1), ErbB2 (HER2/neu), ErbB3 (HER3) and ErbB4 (HER4). One highly promising approach is the targeted inhibition of ErbB growth factor receptors, which are recognized as key signaling pathways in many types of human tumors, including high-grade glioma. In this study we have attempted with attempted with the help of virtual screening and molecular docking approach using Lamarckian Genetic Algorithm to study the binding of ErbB receptor EGFR tyrosine kinase domain with derivatives of anti-tumour molecules from Veratrum Dahuricum.

A dataset of 1000 molecules on the basis of structure similarity of veratramine, jervine, germine & cyclopamine were taken from PubChem database. Molecular docking using Lamarckian Genetic Algorithm was performed resulting inbinding energies in the range of -12.09 kcal/mol to -1.17 kcal/mol. The molecules showing minimum binding energy were then selected for protein-ligand complex analysis for H-bond and other intricate atomic scale properties. The top molecules showing interactions with active site of ErbB receptor EGFR tyrosine kinase domain were then run for in-silico ADMET analysis in which we got promising results. Further in-vitro and in-vivo study is required on these molecules as the binding of these molecules provide hint for design of new inhibitors for ErbB receptor EGFR tyrosine kinase domain.

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Potentially Premalignant Oral Epithelial Lesions- Etiology, Diagnosis and Management

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Abstract:

The term Oral Potentially Malignant Disorder (OPMDs) was recommended at the World Health Organization (WHO) workshop held in 2005. A precancerous lesion is a morphologically altered tissue in which oral cancer is more likely to occur than in its apparently normal counterpart. A precancerous condition is a generalized state associated with a significantly increased risk of cancer. Precancerous lesions of oral mucosa, known as potentially malignant disorders in recent years, are consists of a group of diseases, which should be diagnosed in the early stage. A new term Potentially Premalignant Oral Epithelial Lesions (PPOELs) has recently been used as a broad term to define both histologic and clinical lesions that have malignant potential. This encompasses a number of oral lesions, such as leukoplakia, erythroplakia, erythroleukoplakia, lichen planus, Oral Submucous Fibrosis (OSF), and oral dysplasia.

The most frequently reported possible factors are tobacco use, alcohol drinking, chewing of betel quid containing areca nut, and solar rays. Early diagnosis is very important and can be lifesaving, because in late stages, they may be progressed to severe dysplasia and even carcinoma in situ and/or squamous cell carcinoma. A deficiency of individual or combined micronutrients e.g. vitamin A, B complex, C, D, E and minerals, e.g. iron, calcium, copper, zinc, magnesium have been demonstrated in cases with submucosal fibrosis. P53 is most commonly studied molecular marker in submucosal fibrosis and is positive in 58% of oral cancers and 60% of SMF. In studies it is also demonstrated that P53 is often present in precancerous lesions on patients who chew areca and smoke tobacco. More than 70 types of human papilloma viruses (HPV) have been suspected to play a role in development of cancer from oral Potentially Malignant Disorders (PMD) in particular HPV 16 and HPV 18.

Diagnostic modalities like vital tissue staining with Tolonium chloride (TB), Visualization adjuncts, Cytopathology, a chemiluminescent light detection system, ViziLite, The Microlux DL system and others are available.

Chemoprevention is the use of naturally or synthetically fabricated compounds designed to halt malignant transformation of PPOELs. In addition, they may cause regression or eradication of PPOELs and increase the threshold of malignant transformation. It uses the same concept of field cancerization but for treatment purposes. If further researched and mastered, this potential treatment can reduce the risk of postoperative recurrence rates, stabilize the oral mucosa, and decrease morbidity associated with large surgical excisions. The chemopreventive agents employed included local and systemic vitamin A and retinoids, systemic beta carotene, lycopene a carotenoid, ketorolac (as mouthwash), local bleomycin, and a mixture of tea used both topically and systemically as conservative theraphy. Surgical treatment options include traditional excision, cryosurgery, and carbon dioxide (CO_2) laser ablation.

The paper is an attempt to elaborate and enlighten the premalignant lesions, types, differential diagnosis, recent advances in detection of oral precancerous lesions, conservative and surgical management of them with few clinical cases.

Promising Biomarkers for Diagnosing Non-Small Cell Lung Cancer (NSCLC) & Small Cell Lung Cancer (SCLC)

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Abstract:

Lung cancer is the most often diagnosed cancer and the leading cause of cancer death worldwide. Lung cancer is classified into two types: Small Cell Lung Cancer (SCLC) and Non-Small Cell Lung Cancer (NSCLC). Non-Small Cell Lung Cancer Cancers (NSCLC) accounts for 85 percent of all lung cancers. The high death rate of NSCLC is attributable to a small percentage of diagnoses made at an early stage of the illness. The identification and application of reliable and specific biomarkers is expected to increase the efficacy of NSCLC treatment. MicroRNAs are emerging as possible biomarkers, according to current research. MicroRNA21 is an oncogenic miRNA that regulates the development, metastasis, and death of NSCLC cells by controlling many target molecules and signaling pathways. Small cell lung cancer (SCLC) is a deadly cancer with rapid development, early metastases, and evolved therapy resistance. Small Cell Lung Cancer (SCLC) is a lethal malignancy that develops quickly, spread rapidly, and develops drug resistance. Many studies have suggested that the expression of Schlafen11 (SLFN11) is a possible indicator of sensitivity to both DNA-damaging chemotherapy and PARP inhibition. Future research for SCLC and NSCLC patients will rely on a continuous focus on an integrated platform of fundamental discovery aimed at uncovering novel biomarker-driven ways to incorporate immunotherapy and other targeted medicines.

Hormone Receptor Heterogeneity in Breast Cancer Cells: Understanding the Hormone Resistance

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Abstract:

Background: Breast cancer is the most common cancer in women accounting for 30% of all the cancers in females. The Estrogen Receptor (ER) positive breast cancers are successfully managed with hormonal therapy. However it has been reported that major percentage of patients with ER will show non responsiveness to hormone therapy and emerges as resistant phenotype. Currently the reasons for this resistance and recurrence mechanism are not clear. This could be due to complex cellular heterogeneity in the receptor status or could be attributed to post transcriptional and translational regulation of receptor status. Proper understanding of complex receptor status plasticity of cancer cells and its impact in hormone resistance is key to find interventions to prevent clinical hormone resistance.
To understand these mechanisms, we have developed hormonal therapy resistant cells and analysed the evolutionally signalling involved on resistance generation.
Methodology: We have developed drug-resistant cells in hormone receptor-positive cell lines and studied the dynamics of resistance at distinct stages. In addition, stable cell lines overexpressing receptors of Er-α, Her2 were developed in TNBC cell lines to understand the direct role of receptor status in determining the drug response and cell growth. The stably expressing cells and parental cells were exposed to anti-estrogen 4-OH tamoxifen and the drug responses were analysed using live-cell imaging and western blotting.
Inferences: The expression of receptor proteins seems to be regulated dynamically both during physiological conditions and also under diverse stress conditions. Generation of stable hormone resistance mechanism involves complex modulation of both pro and anti-apoptotic proteins.

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Telomere Independent Nuclear and Mitochondrial Functions of Human Telomerase (h TERT) in the Regulation of Cell Cycle and Cell Death

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Abstract:

The important hallmark of cancer, immortality, is governed by the telomere length maintenance mechanisms of the cell. The human telomerase is the rate-limiting factor contributing to telomere length maintenance subsequent to its reactivation during transformation. Interestingly, recent studies have shown the catalytic subunit TERT is involved in various non- telomere related functions such as regulation of gene expression, growth factors, and cell proliferation. Even though several studies have identified the potential involvement of telomerase in the tumorigenesis process, complex diversifying mechanisms and the interacting partners that govern diverging functions such as apoptosis inhibition, invasion, and redox regulation by telomerase is not well defined. Recent studies have shown that during diverse stress conditions, telomerase undergoes mitochondrial translocation, and its implication to cell death is yet to be ascertained. It is unclear whether mitochondrial translocation is signalling for mitochondrial oxidation or permeabilization or is protective in nature.

Methodology: To understand telomere independent nuclear and mitochondrial functions of human telomerase, real-time time analysis of mitochondrial oxidation and telomerase translocation were studied in cells after shRNA silencing and overexpression of telomerase.

Inferences: The hTERT overexpression in telomerase negative cells showed a significant difference in ROS levels, mitochondrial and lysosomal density

Collagen and Lipid Peroxide Levels in LBC:- A Marker for Cervical Cancer Progression

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Abstract:

Cancer of the cervix is caused by both viral and non viral factors . The current methods of diagnosis include pap smear, LBC, visual examination, biopsy, PCR, etc,. Patients with bad cervix characteristics, cervical dysplasia or as part of regular screening undergo these tests . Presence of lipids help in progression of cancer. Lipids function exogeniously by promoting tumorigenesis and metastasis. Lipid peroxidation by reactive oxidation species play a role in inflammation and consequently in triggering death signals for programmed cell death. The cancer cells generally tend to use anaerobic glycolysis for synthesis of energy. This helps conserve the carbon molecules, consequently there is a decrease in oxygen species and hence in Lipid peroxidation. Tumor cells show lower degree of 'peroxidzability' ,thereby increasing lipid composition of cellular membrane. Changes in the lipid levels helps in the growth rate of neoplasm. Generally as the tumor progresses there is an decrease in Lipid peroxidation. In the inflammatory LBC sample we can see decrease in the smears in the presence of wrats /tumor and very decreased amounts of Lpx in the case of well defined cancer tumors. Conversely the collagen deposition is a major pathological factor in some cancers. Cervical cancers are of squamous cell carcinoma and adenocarcinoma and staged by FIGO system as CN0 to CN2 based of the types of tumor , its location and its spread. Collagen is a major protein present in the tumor micro environment. Collagen plays a major role in cancer fibrosis. Collagen can influence tumor cells by modification of p53, Jak -stat pathway. It causes alteration in adaptive and innate immunity. Collagen stiffness causes death resistance. Collagen may be used as a predictor of prognosis. The study with collagen estimation and masson trichrome staining is concordant with the above theory.

Keywords:

cervical cancer, collagen, LPX, cancer progression

Gut Microbiome and Antimicrobial Resistance in Colorectal Cancer Patients

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Abstract:

Introduction: The gut microbiome defines the microbial structure of the intestine, which is considered a reservoir for a variety of microorganisms. The balance between the microbial constitution and the host organism impacts the host's metabolism. Dysbiosis, a condition that leads to a diseased state, may result in an imbalance in this constitution. Colorectal cancer is the third most common cancer in men while second in women. The study comprises microbial behavior and antimicrobial resistance exhibited by the suspected microorganisms in the prevalence of colorectal cancer.

Methods: A gut microbiome study was carried out in patients with colorectal cancer, comprising the metagenomic study to evaluate the microbial abundances obtained during the diagnostic stage. 16S rRNA sequencing using Illumina Miseq, a next-generation sequencing technique, was carried on the fecal samples collected from colorectal cancer patients. The data analysis for evaluating microbial abundances in the samples was accomplished using the QIIME2 version 2021.4 software.

Result: The microbiome study carried out in 6 fecal samples of colorectal cancer patients revealed that around 120 species from each sample were reported through QIIME2, of which *Clostridium sp., Bifidobacterium breve, Aeromonas sp., Ruminococcus sp., Faecalibacterium sp., Bacteroides, Streptococcus sp*. were found to be abundant. A reduced number of Enterobacteriaceae family species that form the core of the gut microbiome was obtained, leading to dysbiosis. The relative constitution is found to be decreased in such patients. Antimicrobial profiling of the above-detected microorganisms by culture-independent method revealed many multidrug resistance genes, which play an essential role in antimicrobial resistance by hindering the treatment. The most frequently detected resistance genes were cat, bla $_{TEM}$, bla $_{OXA}$, tet, cep, cph, mcr, and aph in *Clostridium sp*., *Aeromonas sp.*, and *Bacteroides*. Besides these, efflux pump-related genes such as erm, and mex was also detected.

Conclusion: The commensals have the potential of resistance to certain antibiotics such as vancomycin. They also secrete small antibiotics such as bacteriocins, thereby maintaining their counts in healthy individuals. During life-threatening conditions such as cancer, prolonged antibiotic exposure results in the imbalance of the gut microbiome and possible inter-species spread of antibiotic resistance genes. A detailed study of the gut microbiome may unlock various insights of treatments for various diseases and helps to elucidate the cause of emergence and take prophylactic measures against the diseased state.

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Combination of Astaxanthin & Spirulina can be a Promising Therapeutic Approach against Carcinogenesis

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Abstract:

Introduction: Worldwide, an estimated 43.8 million people are diagnosed with cancer within last five years. For decades, the only options for cancer treatment were surgery, chemotherapy, radiotherapy, and chemotherapy. Numerous case studies show that micro-algae hold great promise as a weapon in the battle against cancer. Regular intake with Astaxanthin, a red colored antioxidant, with Spirulina, a nutrient-rich, blue-green algae, may be showed promise in cancer therapy.
Objective: The main focus of study is to evaluate the anti-cancer properties of the combination of astaxanthin (ATX) and spirulina (SPU), two natural compounds against various cancers. This combination formulation of ATX and SPU is yet to be established to act an as anti-cancer drug.
Methodology: Several publications have been scrutinized for substantiation of these two compounds' anticancer properties in different types of cancer, as well as how these compounds function against malignant cells.
Result: Apparently, Spirulina's therapeutic action can prevent HCC(hepatocellular carcinoma) conformational alterations. Astaxanthin, on the other hand, is involved in the prevention of prostate cancer in nude mice. If these two drugs are administered as a combination formulation, a satisfactory result can be predicted.
Conclusion: This review may provide insight into future cancer research, as well as study into the combined therapeutic benefit of these two naturals against cancer.

Keywords:

Astaxanthin, Spirulina, Cancinogenesis, GLOBOCAN, Algae, etc

Psychosexual Rehabilitation Post Prostatectomy: Role of Self Compassion

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Abstract:

The diagnosis of cancer poses multiple physical, psychological, social, occupational, financial and spiritual challenges for the patient and their families. Prostate cancer frequently affects men over 50 years of age and the treatment plan often involves prostatectomy to save the lives of those affected. Prostatectomy has been frequently reported to be followed by sexual dysfunctions as well as extensive impact on the sexual self concept of the patients. Sexuality is an integral part of one's life and has deep subjective meaning that ranges from personal image, preferences, pleasure, social identity and interpersonal competence to name a few. Even though sexuality interacts so intimately with one's wellbeing, the area of psycho-sexual rehabilitation of prostate cancer survivors remains greatly underattented. The taboo around sexual matters, unacknowledgement of the significance of sexuality in one's life, shame and discomfort in patients as well as professionals while discussing sexual concerns can be cited as the major reasons for the same.

This paper attempts to highlight the psychological distress associated with one's distorted sexual self concept and disturbed sexual functioning following prostatectomy, psychosocial barriers in seeking help for the same and role of self compassion for efficient psycho-sexual rehabilitation. To achieve the proposed objectives, the case of a 51 year old, engineering graduate, government official Hindu married male belonging to a nuclear family of high socio- economic status residing in an urban area of Maharashtra, survivor of prostate cancer is analysed and discussed. The findings of the study are insightful to understand the crucial importance of cultivating self compassion and appropriate psychosexual rehabilitation interventions as part of a multidisciplinary, comprehensive management plan for prostate cancer survivors

Keywords:

Prostate cancer, Prostatectomy, Psychosexual Rehabilitation, Self Compassion

Pre & Post Operative Physiotherapy for Breast Cancer: A Literature Review

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Abstract:

Background & Introduction: Breast cancer is the most prevalent malignancy among women with highest survival rates amongst all cancer. Pre & post operative physiotherapy treatment being used with breast cancer patients.
Implementation strategies including music therapy, stress management training, informational & emotional support session, compression bandage, LLLT, physical exercise (aqua lymph training; Hydrotherapy & yoga) & APCD is used for home protocol.
Methodology: The author conducted a comprehensive search of open access articles of major scientific databases including Pub Med, SCIENCEDIRECT, EBSCO, SCOPUS, Web of Science, shodhganga, Google Scholar etc. Five significant scientific studies were found relating to the Pre& post operative physiotherapy for breast cancer.
Results: Effective intervention employed to reduce anxiety symptoms among preoperative breast cancer patients & postoperative intervention reduced proximal arm volume, improve ROM & QOL.
Conclusions: There is sparing research to draw on to determine the optimal approach to decrease preoperative anxiety for this patient population & for postoperative particularly for shoulder mobility & lymph-edema good evidence for narrowly focused physiotherapy management.

Keywords:

Advanced Pneumatic Compression Device (APCD), Low Level Laser Therapy (LLLT), Music Therapy, Quality Of Life (QOL), and Range of Motion (ROM).

Management of Liver Metastases in Neuroendocrine Tumors: About 3 Cases and Literature Review

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Abstract:

Introduction : Neuroendocrine tumors (NETs) encompass a rare and heterogeneous group with variable clinical behavior. The presence of liver metastases (LMs) is a negative predictor of survival. Our aim is to highlight the clinical and therapeutic characteristics of these entities.

Methods: we reported 3 cases of NETLMs treated in the medical oncology department Fattouma Bourguiba hospital ,Monastir,Tunisia between 2016 and 2019.

Results: The mean age was 52 years (50-56) with a sex ratio of ½. The main reason for consultation was a carcinoid syndrome (n=3). The diagnosis was confirmed by a liver biopsy (n=3).The site of the primary tumor was unknown (n=2) and a pancreatic primary tumor was identified (n=1). The somatostatin receptor scintigraphy using Octreoscan detected an intense tracer uptake by hepatic cells (n=3). Therapeutically, 1 patient received 41 injections of Sandostatin (SA) with stable liver lesions at evaluation. A patient received 12 injections of SA with metastases progression as well as the primary pancreatic lesion, she then received 6 cycles of GEMOX chemotherapy (CT) with progression at CT scan control after one year 4 months of follow-up, currently she is undergoing LV5FU2 CT. The 3rd patient has progressed after 16 SA injections, she then received 3 cycles of GEMOX CT with tumor stability and 3 other cycles were scheduled.After an average time of 127 months (30-60), all patients still symptom-free.

Conclusion: The liver is the predilection site for NETs metastases.Although several therapeutic modalities are available for these LMs, including surgical resection and systemic therapies,their management is not yet well established. Further research is still needed to achieving the best possible outcomes for symptom control and survival.

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Mycosis Fungoides: A Rare Type of NHL

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Abstract:

Mycosis fungoides(MF) is the most common form of cutaneous T cell lymphoma. Cutaneous lymphomas are a rare heterogenous group of Non Hodgkin Lymphomas of T and B cell origin. The primary organ of involvement in this type of lymphoma is skin. It is usually diagnosed at a late stage as the symptoms and skin biopsy findings are similar to those of other common skin conditions.

Uncommon Presentation of a Common Malignancy

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Abstract:

According to recent world organization reports, lung cancer has become the most common type of malignancy and the leading cause of death from cancer. Lung cancer frequently metastasizes to hilar lymph nodes, brain, adrenal glands, bone but rarely to skin.

Here we report a 79 year old male nil premorbid non smoker presented with a ulceroproliferative lesion on left thigh Biopsy of the lesion s/o adenocarcinoma taking note of the IHC findings [CK 7, TTF1, P63+] favors metastatic adeno carcinoma from lung/thyroid.

PET CT done s/o consolidative soft tissue density mass lesion in the left lung lower lobe ? Primary.

Correlating radiological, histopathological evaluation s/o adenocarcinoma lung with cutaneous metastatic deposit patient was started on gefitinib.

Investigating the Anti-Cancer Potential of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)-An Insight to Drug Repurposing

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Abstract:

Drug Repurposing is a new, interesting, simple-yet effective strategy, which has successfully been used in numerous fields like, Oncology, Pharmacology, Genomics and Proteomics. The prime reason behind its use is it reduces costs, time and lot of efforts. We aim to present our research on the use and effect of amino salicylate class of NSAIDs on various types of cancer. It starts with *in silico* screening of the potent drug candidates to predict its experimental binding and affinity towards several receptors. This is followed by *in vitro* study (MTT Assay) in which Mesalazine compound was taken and tested on MCF-7 breast cancer model for its anti-cancer activity, based on its frequent use and availability. The ligands bound fairly well with all proteins but did not show any visible cell death or morphological changes. This could be concluded on factors like, drug efflux, target modification, alternative survival mechanism and gene amplification.

Keywords:

Cancer, Drug Repurposing, Mesalazine, MCF-7

Analysis of Laboratory Sample Rejections in the Pre-Analytical Stage at an Oncology Centre

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Abstract:

Introduction: Clinical laboratories play a crucial role in the diagnosis and management of patients.These are some of the key indicators of errors that can help & identify potential improvements in patient safety during pre-analytical phase in clinical laboratories.Clot was found to be the major cause of rejection of samples, followed by insufficient sample volume,patients clinical history was not provived,improperly labeled samples, samples collected in expired vacutainers,samples received without requisition,unlabelled samples & haemolysed samples.Errors in clinical laboratories have a great impact on safety and care of patients. The pre-analytical phase is responsible for about 70% of errors.

Quality indicators in the clinical laboratory provide a useful tool for continuous improvement of laboratory services. In this study, we aimed to evaluate the sample rejection ratios according to the types of pre-analytical errors.

Materials and Methods: A retrospective, intervention and prospective analysis of the samples rejected from the total samples received in our laboratories, during a period from Jan 2019 to July2021 was undertaken.

Results and Observations: Out of 216631 samples received during Jan 2019 to July 2021, 318 samples (0.15 %) were rejected. The most common reasons for rejection is clotted blood samples (57.14 %) ,followed by improperly labelled samples(14.28%), haemolysed samples(11.42%), insufficient sample volume (8.57%), Samples without requisition (5.71%) & Samples in expired vacutainers(2.85%), After continuous intervention drop in sample rejection was observed from 163 to 41 samples

Conclusion: This study has shown that the most frequent causes of pre-analytical errors are clotted samples , improperly labeled samples. haemolysed samples & samples with insufficient volume. Significant drop in sample rejections post-interventions shows that analysis of rejections and corrective actions help improve patient safety and care

Repurposing Anti-Hypertensive Drugs to Examine Their Therapeutic Efficacy in Cancer

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Abstract:

Cancer is a complex group of diseases that constitute the second largest cause of mortality worldwide. Chemotherapy is the most common treatment option, but leads to the toxic side effects that are often more debilitating than the disease. Therefore, reasonable and time consuming strategy of drug repurposing (reusing existing drugs for new medical indication) appears to be an important source of possible pharmacological alternatives for cancer treatment. In recent studies, antihypertensive drugs have exhibited pharmacological properties useful for the treatment of cancer, rendering them candidates for drug repurposing. Additionally, these drugs are well tolerated, orally administered, and off-patent, making them cheaper than other cancer treatments. Our study aims to explore the repositioning of antihypertensive drugs as an adjuvant therapeutic option in cancer. Computational analysis using molecular docking was performed using AutoDock Vina and comparative evaluation was done by docking various antihypertensives drugs with several genes that are known to play an important role in cancer pathogenesis. All the compounds exhibited good affinity towards the target proteins and highest affinity was exhibited by the compound telmisartan. Cytotoxicity studies of telmisartan was performed by MTT assay on MCF7 (breast cancer cell line) for an incubation period of 24 hours. Significant morphological alterations were observed when MCF7 cells were treated with different concentrations of telmisartan. Based on *in silico* and *in vitro* studies, we can state conclusively that telmisartan seems to be a promising drug repurposing candidate for therapeutic treatment of cancer.

Keywords:

Cancer, Drug Repurposing, Molecular Docking, AntiHypertensive Drugs, Cytotoxicity

A Critical Review on Human Colon Cancer Cells by Plant Compounds

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Abstract:

Most frequent malignancies in the world is colorectal cancer. Even though recent advances in chemotherapy have improved colorectal cancer patient management and survival, side effects and resistance to chemotherapy have shown the drug's limitations, encouraging the hunt for other treatments. In this context, medicinal plants include a huge number of chemicals that have been shown to have cytotoxic and apoptogenic effects against a variety of malignancies, including colorectal cancer. These chemicals come from a wide range of phytochemical families and activate a number of different signalling pathways. We look at current findings on the anti-colorectal cancer properties of various plants in vitro and in vivo, as well as the phytochemical substances that may be involved, in this paper. Their effects on a variety of cancer signalling pathways are also investigated. This review emphasises the importance of medicinal plants as potential sources of lead anti-colorectal chemicals.

Prognostic Factors and Treatment Outcomes of Patients with Early Stage Cervical Adenocarcinoma – A 15 Year Single Institutional Analysis

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Abstract:

Aim: We aimed to assess the clinicopathological features and to determine the prognostic factors of cervical adenocarcinoma (AC). Relevant data were of surgically operated patients was extracted from the institutional database from 2005-2020.

Methodology and Results: A total of 70 patients with stage IA to IB3/ IIA cervical adenocarcinoma treated with radical hysterectomy and systematic pelvic lymphadenectomy from 2005 to 2020 were retrospectively analyzed. Clinicopathological data including age, stage, tumor size, the number of positive node sites, lymphovascular space invasion, parametrial invasion, deep stromal invasion (> 2/3 thickness), corpus invasion, vaginal infiltration, and ovarian metastasis, adjuvant therapy, and survival were collected and Cox regression analysis was used to determine independent prognostic factors.

Results: 17.1% patients were stage IB1, 74.2% patients stage IB2, 5.7 % patients stage IIA and stage IB3 2.8%. Median age was 46 years. An abnormal Pap smear was seen in 28.5% patients. Pelvic lymph node involvement was noted in 25%. All node positive patients and patients with cervical risk factors were treated with adjuvant radiation. Median follow up was 52 months.

Conclusion: This series provides insight into the management of early stage cervical adenocarcinoma. There is a slightly higher risk of nodal spread and a poorer outcome compared to squamous type. LN involvement was found to be the most important independent prognostic factor apart from other factors.

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