



KLE Society's
S. NIJALINGAPPA COLLEGE

II-Block, Rajajinagar, Bengaluru-10
*Re-accredited by NAAC at A+ grade with 3.53 CGPA
College with UGC-STRIDE Component - I*



**COMPENDIUM OF
RESEARCH ABSTRACTS**



NATIONAL CONFERENCE

On

**“EVOLUTIONARY BIOLOGY
AND INFECTIOUS DISEASES”**

Organized by

DEPARTMENT OF ZOOLOGY

24th February 2023

ISBN : 978-93-5811-636-6



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24th February 2023, Friday

zoologydept@klesnc.org / www.klesnc.org

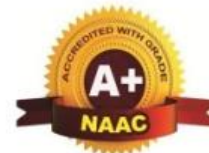
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National Conference on “Evolutionary Biology and Infectious Diseases”

Inaugural function, Keynote address & Technical session-I	
Prof. Devaraju K. S. Professor and Chairman, Department of Biochemistry Karnataka University, Dharwad.	Resource Person
Oral Presentation-I	
Dr. Latha V. Assistant Professor of Zoology Maharani cluster University, Bengaluru.	Session Chair
Dr. Suhasini L. Kudupali	Moderator
Technical Session-II	
Dr. Shabir Ahmad Assistant Professor of Biochemistry Basic Sciences and Humanities FoA, SKUASAT-K, Jammu and Kashmir.	Resource Person
Oral and Poster Presentation-II	
Prof. Devaraju K. S. Professor and Chairman Department of Biochemistry Karnataka University, Dharwad.	Session Chair
Dr. Narayanaswamy S. Y.	Moderator
Valedictory function	
Dr. Arunkumar B. Sonappanavar, Smt. Tejaswini V. Nandi Dr. Narayanaswamy S.Y. Dr. Suhasini L. Kudupali Smt. Jalajakshi T. B.	Principal KLESNC & President Convenor Organizing Secretary Member Member

About the KLE Society

The **Karnatak Lingayat Education Society, Belagavi**, since its inception 1916 by a group of seven young and dedicated graduates respectfully called “Saptarshis”, has been a role model in imparting quality education and upliftment of socio-economic status. The KLE Society disseminates the knowledge in all spheres of education from KG to PG, for overall personality development of the students. It promotes and encourages the student's community to opt for programmes like Medicine, Dentistry, Pharmacy, Nursing, Agriculture, Law, Business Management, Hotel Management, Engineering & Technology, Arts, Science, Commerce and Education. Under the leadership of visionary chairman Dr. Prabhakar B. Kore, Ex-M.P., the number of institutions has elevated up to 300 in various fields of education including research in India & abroad quality concept.

About the College

KLE Society's S. Nijalingappa College, established in the year 1963, is one of the premier institutions under KLE Society and has been included under 2(f) and 12(B) of UGC. The college has seen phenomenal growth in terms of courses offered, quality enhancement, student, and staff strength besides development in infrastructure. Over its glorious service of more than a half century to the community, the college has earned many significant laurels. The crowning ones of these are the rare distinction of having been re-accredited at 'A+' grade with CGPA 3.53 on a 4-point scale in 2016. College has received the status of 'College with Potential for Excellence' Phase II and UGC STRIDE component-I by UGC in 2019. The college conducts a range of UG courses in B.A, B.Sc, B.Com, BCA, BBA, BHM, BTTM and PG Courses in M.Sc, M.Com, MCA, MA, MTTM and Ph.D in commerce to cater to the diverse needs of the evolving higher education scenario at the national as well as Global level.

Over all development of the student is ensured by necessary support facilities like advanced library, counselling placement, Internet centre and multi-speciality gymnasium. The health centre caters to the health care for wards. Hostels with transport facilities are provided. The college takes pride in its distinguished alumni in all walks of life.

About the department

The Department of Zoology came into existence in the year 1967, currently affiliated to Bengaluru City University offering CBZ and CZBt undergraduate programmes. Department has state of Art Museum and well-equipped laboratories and Central Research centre. The faculty have contributed continuously for growth of the department.

The department has been constantly involved in diverse kinds of activities by conducting seminars, workshops, lecture series, faculty development programs and conferences for students, research scholars and faculties. The faculty of department are involved in various student research activities.

Gmail ID: zoologydept@klesnc.org

National Conference on “Evolutionary Biology and Infectious Diseases”

About the Conference

The Evolution of Infectious Diseases conference supports research on the evolutionary, organismal and social drivers that influence the transmission dynamics of infectious diseases. The theme of submitted conference must be the quantitative, mathematical or computational understanding of pathogen transmission dynamics. The intent is discovery of principles of infectious disease emergence and transmission. They should focus on the determinants and emergence and transmission among any host species. Understand the molecular structure and function of known viral, bacterial, fungal and parasitic pathogens. Extending insights, mechanisms of infection, pathogenicity, virulence, host-pathogen interactions, development of drug resistance for diseases such as TB repurposing of drugs for infectious diseases and anti-microbial resistance. Developments of indigenous, reliable, rapid, sensitive, specific, cost-effective and easy to use in a variety of settings diagnostic platforms and technologies.

Theme: “National Conference on Evolutionary Biology and Infectious Diseases”

Subthemes:

1. Parasitology
2. Toxicology
3. Immunology
4. Insecticide resistant management
5. Anthropogenic environment changes
6. Vector borne diseases
7. Public health
8. Epidemiology

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- | | |
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| • Dr. Prathibha K.S. | Member |

National Conference on “Evolutionary Biology and Infectious Diseases”

SCHEDULE

01	Inaugural function and Key note address 24th February 2023 @ 10.15 AM to 11.30 AM		
02	10.30 AM to 11.30 AM	“CORONA- Covid- 19 is Molecular evolutionary Challenges to the World”	Resource Person Prof. Devaraju K. S. Professor and Chairman, Department of Biochemistry Karnataka University, Dharwad.
	11.30 AM to 11.45 AM	Tea Break	
03	11.45 AM to 01.30 PM	Oral presentation I	Session Chair Dr. Latha V. Assistant Professor of Zoology Maharani cluster University, Bengaluru.
	01.30 PM to 02.15 PM	Lunch Break	
04	02.15 PM to 03.15 PM	“Exploring Novel drugs for a Specific target Discovery to development”	Resource Person Dr. Shabir Ahmad Assistant professor Biochemistry Basic sciences and Humanities FoA, SKUASAT-K Jammu and Kashmir.
05	03.15 PM to 05.15 PM	Oral presentation II	Session Chair Prof. Devaraju K. S. Resource Person Professor and Chairman, Department of Biochemistry Karnataka University, Dharwad.
06	Valedictory function: 24th February 2023 @ 05.15 PM to 05.30 PM Presided by : Dr. Arunkumar B. Sonappanavar, Principal		

National Conference on “Evolutionary Biology and Infectious Diseases”

Message by

Dr. Prabhakar B. Kore, Ex-MP

Chairman

KLE’s Society, Belagavi

Karnataka



I am delighted to know that Department of Zoology, KLE Society’s S. Nijalingappa College; Bengaluru is organizing one Day National Level Conference on **“Evolutionary Biology and Infectious Diseases” on 24th February 2023** and has invited eminent resource personalities. I am sure that the conference will enrich the knowledge of academicians and administrators of higher education institutions across the nation Congratulations to the organizers and I wish the conference a grand success.

National Conference on “Evolutionary Biology and Infectious Diseases”

Message by

Sri. Mahantesh M. Kavatigimath

Ex-Chief Whip, Government of Karnataka

Member, Board of Management

KLE Society, Belagavi

KLE Society’s S. Nijalingappa College

Rajajinagar, Bengaluru 560010.



Greetings from KLE’s S. Nijalingappa College, Rajajinagar, Bengaluru - 10

As a part of this National Level Conference, I take great pride in welcoming Resource persons and all the delegates of the conference on entitled “**Evolutionary Biology and Infectious diseases**” held on **24th February 2023**. This national level conference organized by the department of Zoology to share the novel scientific thoughts and research findings of the academicians, administrators, research scholars and students. In the present scenario the entire globe is facing kinds of abnormalities so the attempts for the perpetual solution to create awareness. The department of Zoology has been striving to contribute forward by offering a forum for generating innovative ideas in National level Conference.

I congratulate Principal and organizing committee of the National Level conference for the grand success.

National Conference on “Evolutionary Biology and Infectious Diseases”

Message by

Sri. Shankaranna I. Munavalli

Member, Board of Management

KLE Society, Belagavi

KLE Society’s S. Nijalingappa College

Rajajinagar, Bengaluru 560010



This is my privilege and I am very happy to welcome you all for one Day National Level Conference on “**Evolutionary Biology and Infectious diseases**” held on **24th February 2023**, organized by Department of Zoology KLE Society’s S. Nijalingappa College, Bengaluru. It is worth mentioning that the topic of the conference is related to the Infectious diseases. The conference will help in understanding the back ground of many infectious diseases. I am sure that the one day key note address, special talk and academic/research work presentations will be helpful for the participants.

National Conference on “Evolutionary Biology and Infectious Diseases”

Message by

Dr. Arunkumar B. Sonappanavar

Principal,

KLE Society’s S. Nijalingappa College

Rajajinagar, Bengaluru-560010



It gives me immense pleasure to welcome all the eminent speakers and delegates to the one Day National Conference on “**Evolutionary Biology and Infectious diseases**” held on **24th February 2023** organized by Department of Zoology, S. Nijalingappa College, Bengaluru. The Conference covers a key note address followed by two technical sessions by eminent speaker and Paper presentation by Faculty, Students and Research scholars across the country. The one-day academic deliberations in the conference enlighten the faculty, researchers, and students to bring awareness about Advancements in Infectious diseases. On this occasion, I extend a heartfelt welcome to all the delegates, students, and research scholars of KLE Society’s S. Nijalingappa College, Bengaluru. The college will bring out compendium of abstracts.

I congratulate the organizing committee members of conference in conducting such an event to boost the knowledge of faculty, researchers, and students.

RESOURCE PERSONS



Prof. Devarju K. S. M.Sc., Ph.D., FSIBT
Professor of Biochemistry
Karnataka University, Dharwad



Dr. Shabir Ahamad
Assistant professor of biochemistry
Basic Sciences and Humanities
FoA, SKUSAT, Jammu and Kashmir

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1. NASAL RHINOSPORIDIOSIS IN A CHILD: A CASE REPORT FROM A TERTIARY CARE HOSPITAL

Mousumi Bhowmik

Medicine and JNM college of Medicine and Hospital

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Abstract

Rhinosporidiosis is a rare chronic granulomatous disease caused by *Rhinosporidium seeberi*. It is characterized by polyposis of nasal cavity, conjunctiva and other mucosal as well as non-mucosal body sites. The disease is hyper endemic in the Indian subcontinent with 90% prevalence rate and pediatric incidence is estimated 1.4%. Diagnosis is based on microscopy and histological examination of the lesion. A 7-year-old boy from North 24 Parganas district presented with recurrent nasal bleeding associated with mild itching for last 7 months. Similar history for last 6 years. History of bathing in pond on examination, red friable mass in the right nasal cavity. Excision of the mass and cauterization done. Microscopy confirmed it as Rhinosporidiosis. Rhinosporidiosis is a condition which both clinicians and microbiologists should keep in mind when managing patients from endemic places. It has a high recurrence rate so it is important to follow the clinical course. Prevention will be best option to be safe from this organism as the disease takes a chronic course which makes diagnosis difficult.

Key words: Rhinosporidiosis, Hyper endemic, Pediatric, Microscopy and Chronic

2. PATHOGEN AND ANTIBIOTIC RESISTANCE PROFILE OF VENTILATOR ASSOCIATED PNEUMONIA IN A TERTIARY CARE HOSPITAL IN DAKSHINA KANNADA

Jijith S

Post graduate student Microbiology Yenepoya Medical College

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Abstract

Ventilator-associated pneumonia (VAP) is a type of hospital acquired pneumonia that develops 48 hours after endotracheal intubation. VAP is associated with prolonged duration of mechanical ventilation and ICU stay. It is the 2nd most common infection in critical care units. This study was carried out to assess the pathogen and antibiotic resistance profile among microbial agents causing VAP. This was a retrospective study using data from of two consecutive years (2021 & 2022) obtained from records of hospital infection control unit. Only those patients who were on mechanical ventilation for more than 48 hours and had clinically suspected pneumonia were included. Endotracheal aspirate from these patients were subjected to quantitative culture and colony count of $\geq 10^5$ CFUs/ml was considered significant. Bacterial identification and antimicrobial susceptibility was performed using automated ID & AST system. VAP rates of 8.7 and 8.19 per 1000 ventilator days were noted in 2021 and 2022 respectively. Gram negative bacteria (GNB) like Klebsiella and Acinetobacter species were the most common etiological agents causing VAP. A large majority of the bacterial isolates were resistant to more than 3 classes of antibiotics and hence were multidrug resistant (MDR). High antimicrobial resistance among GNB has become a global crisis. Treatment of MDR GNB in critically ill patients presents with several challenges including the overuse and misuse of high-end antibiotics like Carbapenems and Colistin. The results of this study will offer a deeper insight into tailoring the treatment of VAP based on bacterial sensitivity patterns.

Keywords: Antimicrobial resistance, multidrug resistance, ventilator-associated pneumonia and gram-negative bacteria.

3. INSECTICIDE RESISTANT MANAGEMNET (IRM): SCOPE AND CHALLENGES

Latha.V.,¹ Meera. B.K¹ and A.L Kokilamani².

¹Department of Zoology, Maharani Cluster University, Palace Road, Bangalore.

²Department of Studies in Zoology, Tumkur University, Tumakuru.

Abstract

Insecticide resistance management (IRM) is a strategy used to preserve or prolong the susceptibility of mosquito vectors to insecticides, in order to maintain the effectiveness of vector control interventions. IRM involves multiple components, such as minimizing pesticide use, avoiding tank mixes and persistent chemicals, using long-term rotations of pesticide from different chemical classes, and incorporating pest monitoring. The strategies include closely monitoring pest populations and natural enemies, integrating multiple control strategies such as softer chemistries, biological insecticides, beneficial insects, cultural practices, and transgenic plants. Insecticide resistance management (IRM) is essential for preserving the utility of current and future insecticides. The best way to manage pesticide resistance is to focus on three strategies: avoid, delay, and reversal. This includes minimizing pesticide use, avoiding tank mixes of two insecticides with the same mode of action, avoiding persistent chemicals, and using alternative control methods such as biological control or cultural practices. The scope of insecticide resistance management (IRM) is to prevent the emergence of resistance in susceptible populations, slow its evolution, or reverse it to a susceptible state. This is done through strategies that fall under three guiding principles: creating low selection pressure in combination with non-chemical control measures, using a mixture or rotation of unrelated insecticides, and using mode of action labelling and alternations or mixtures for resistance management. The challenges of insecticide resistance management include minimizing pesticide use, avoiding tank mixes, avoiding persistent chemicals, and using long-term rotations of different types of pesticides. Insects have been found to use a variety of molecular resistance mechanisms, including metabolic and target sites. These mechanisms can be detected through standardized phenotypic insecticide-resistance bioassays. Insecticide Resistance Management (IRM) is an important strategy for preserving the effectiveness of insecticide-based vector control interventions. In conclusion, insecticide resistance management is an ongoing issue that can never be completely halted. To delay and manage resistance, an integrated resistance management plan should be utilized. This plan should include creating low selection pressure in combination with non-chemical control measures, using a mixture or rotation of unrelated insecticides, and applying a lethal rate of an insecticide.

Key words: Insecticide, Populations, Management, Resistance and Lethal rate

4. NUTRIENT ANALYSIS OF EARTHWORM CASTING COLLECTED FROM THREE DIFFERENT ECOLOGICAL HABITATS

Bhoomika Nayana T.G.¹, Lavanya R.², Kokilamani A. L.³ and Latha V.⁴

^{1,2,3}Department of Studies and Research in Zoology, Tumkur University, Tumakuru, India

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Abstract

Casts are produced after earthworms ingest mineral soil and particulate organic matter, mix them together and enrich them with organic secretions in the gut and then eject the material as slurry or as discrete faecal pellets within or upon the soil, depending on earthworm species. Vermicast egested by the earthworm is a good source of N and P which is easily available to the plants and it has many advantages as compared to fertilizers and compost. A study on nutrient analysis of casts collected from three different ecological habitats was conducted in and around Tumakuru from January-2020 to March-2020 by hand picking method. The earthworm casts and soil samples were collected alternatively from three areas of each study site (forest, agriculture and industry) in separate polythene labelled bags. The collected samples were analyzed for pH, EC, OC, N, K, P, S (macro nutrients), Ca, Mg, Fe, Mn, Zn, Cu (micronutrients) and As, Pb, Cd (heavy metals) were also observed. The values of all the parameters of castings and soil samples were tabulated and analysed by statistical method using mean, standard deviation and ANOVA by Excel version 2007. It was found that the worm cast collected from the forest site contains maximum nutrients in particular NPK level than the worm cast collected from other two study sites i.e. agriculture and industrial sites. The quality of surface soil was also found to be more nutrient in the forest site than the other two study sites. From all the three study sites the nutritional value of worm cast ranges from FS>AS>IS than their respective surface soil. From our study, it has found that the agriculture site needs the supplement of nitrogen and phosphorus to compensate their deficiency in the surface soil. Application of chemical fertilizers and pesticides in the agriculture field might suppress the activity of earthworms. Dumping of industrial waste might decrease the nutritional quality of surface soil in and around industrial area. To overcome the degradation of soil health, pollution of ground water, rivers and lakes, one must be suggested to avoid chemical fertilizers and pesticides; instead they can implement the usage of organic manure and vermicompost for their agriculture purpose.

Keywords: Earthworm cast, soil fertility, Tumakuru, Pesticide and Vermicompost

5. EFFECT OF FIPRONIL-5% SC AND LAMBDA-CYHALOTHRIN ON THE HISTO-ARCHITECTURE OF EARTHWORM-*EUDRILUS EUGENIAE*

Geetha B. N¹, Navya S. B¹, Nayana S. N¹, Poojashree T. L¹, Sushitha H. S¹,

Vani shree D.K¹ and Kokilamani A.L¹

¹DOSR in Zoology, Tumkur University, Tumakuru, India

Corresponding Author: alkokilamani@yahoo.co.in

Abstract

Agricultural expansion and increased use of pesticides often lead to affect the soil ecosystem. Most of the pesticides are non-specific and affects the non-target organisms. Such pesticides cause morphological, behavioural and physiological changes in many soil dwelling organisms. Earthworms are one such non-target organisms that live in soil habitat and adopted for extracting nourishment from it. The pesticides like Fipronil 5% SC and Lambda-cyhalothrin are widely using in the agriculture fields of Tumakuru district as insecticides were used to study their effect on the histo- architectural changes in the *E. eugeniae*. The worms are epigeic and more prone to get affected from the pesticides. An investigational study was conducted for a period of 3 months from June-2022 to August-2022 in the laboratory conditions. Toxicity test of these selected insecticides on *E. eugeniae* was conducted according to OECD- Acute toxicity of earthworm -207 guidelines. The histological study was performed by exposing the adult worms to the soil spiked with lethal, sub-lethal, above lethal concentrations of both the insecticides in separate containers for a period of 120Hrs and 15 days observation. It was observed that all the worms exposed to the treated soil were alive but their histo-architecture of midgut and clitellum regions shown to be distorted chlorogogenous tissue, damaged epidermal glandular tissues and ovary structures. The effect of insecticides on the histo-architectural changes of the midgut and clitellum have negatively influenced on the food absorption and reproductive capacity of *E. eugeniae*. This was evidenced in their reduced cocoon formation and average body weight by 0.02mg after treatment with insecticides particularly with Lambda-cyhalothrin. Our results conclude that both the selected insecticides have significant effect on the histo-architectural changes in *E. eugeniae* and the level of toxicity also varies among these two insecticides. It has proved that the Lambda-cyhalothrin was highly toxic to *E. eugeniae* than the Fipronil 5% SC. So, it is suggested to use this particular insecticide in an eco-friendly safe limit.

Keywords: Fipronil-5%SC, Lambda-cyhalothrin, *Eudrilus eugeniae*, chlorogogenous tissue

6. RELEVANCE OF TRADITIONAL COMPLEMENTARY AND ALTERNATIVE MEDICINE (TCAM) IN PALLIATIVE CANCER CARE

Nayana Mithunrosh and K. Rajasekharan Nayar
Global Institute of Public Health, Thiruvananthapuram

Abstract

According to global cancer-registry 2020, the cancer burden is rising alarmingly. The cardinal treatments of cancer can cause secondary-health problems, which adversely affect the quality of life. Palliative-care is an important service provided to cancer patients and it helps to relieve the symptoms and improve the quality of life. India is a country which lacks adequate and proper palliative-care accessibility. Additionally, the doctor patient ratio in India is also low. In this context, TCAM plays a key role, because it seems to be beneficial for the improvement of quality of life of cancer patients. The paper is based on a focused review of studies at the international and national levels. As a part of this review, search was done using search engines like Google Scholar and Pubmed with keywords-TCAM, cancer patients, palliative-care, palliative-health-professionals etc. The relevant studies were identified and categorized according to themes and sub-themes such as trends in oncology, the importance of palliative-care in oncology, use of TCAM etc. From the review, it was evident that globally many cancer patients use TCAM at various stages of their disease. It was revealed that the main aim of both modern medicine and TCAM is to reduce the advancement of cancer, to suppress the pain and to improve the quality of life. Ayurveda, homeopathy, Siddha medicine, herbal medicines, acupuncture, yoga, keto-genetic diet, aromatherapy and nutritional TCAM have all shown to improve the quality of life in cancer patients. In addition, globally, many physicians accepted the TCAM usage. Palliative care helps to make a gradual transition from treatment for cure to treatment for hospice care. Implementation of integrative-oncology along with TCAM seems to be effective for enhancing maximum utilization of main-stream cancer therapy. Palliative care is a multi-disciplinary approach to maintain the best quality of life as it considers cancer patient as a whole. From a public health point of view, the focused review shows that integrative-oncology along with TCAM in palliative care has great significance in maintaining the quality of life of cancer patients. The service of TCAM professionals in palliative cancer care will help to enhance the palliative-health-care accessibility to cancer patients and improve consistent professional support to them.

Key words: Cancer, Palliative care, Medicines, Therapy and TCAM

7. TO DETECT THE POST COVID SYNDROME WITH RELATION TO VACCINATION STATUS IN PCR CONFIRMED COVID 19 INFECTED PATIENTS PROSPECTIVE STUDY

A. Ramyasree¹ and Dr. Sethumadhavan²

Research scholar¹ MD, Professor, Department of Microbiology, AVMC, Puducherry²

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Abstract

Data are available concerning the effect of SARS COV2 vaccination on symptoms associated with COVID19 infection can result in long term physical and mental health consequences lasting for longer than 3 months after infection are called post COVID syndrome. Study was conducted by number of particulars 381 symptomatic patients, Duration of the study: 18 months in a tertiary care hospital in Telangana. All Symptomatic patients satisfied the inclusion criteria and were included in the analysis patients aged above 10 years. Those patients who did not give consent and did not respond to participate in study patients below the age of 10 years. This is a prospective study where data will be collected from individuals who are PCR confirmed covid19 infected patients diagnosed from January 2021 till November 2022 patients from our tertiary care hospital will be included in this study contact information of patients will be available with us. Informed consent will be obtained from all participants and approval from institutional ethical committee before starting the study. After enrolment, PCR confirmed COVID 19 infected individuals the participants will have to complete a questionnaire with questions regarding socio-demographic details, contact information, symptoms when diagnosed with SARS CoV2, medical comorbidities and risk factors, current health status and present symptoms. To assess the post COVID syndrome in the general population, questions regarding their recovery after infection, the duration they required to become symptom free, any persistent symptoms and other or new ongoing symptoms will be recorded by personal interview. A total of 381 patients completed the survey 356 satisfied the inclusion criteria male are 234 and females are 147 the initial infection as proven with .Antigen Test (Standard Q kit) and RT-PCR (PROMEA THERAPEUTICS) as done by taking Nasopharyngeal swab Total 172 patients received at least one dose of SARS COV 2vaccine at the time of survey,138 received 2doses of vaccine,71 are unvaccinated , The vaccinated and unvaccinated groups were comparable in terms of gender distribution and socioeconomic characteristics. For modified dyspnea Medical Research Council scale, Grade >1 dyspnea will be considered significant. For FAS scale, score of 22 or more will be considered as threshold. For DASS 21 scale, score for depression > 9, score for anxiety > 7 and score for stress >14 will be reported as significant. Double vaccinated participants as associated with reduced risk of reporting most of post-acute COVID 19 symptoms. Our results suggest that vaccination may have a protective effect against long term covid 19 symptoms.

Key Words: SARS COV2, Mental health, RT-PCR, Socioeconomic and Anxiety

8. THE MANAGEMENT OF COVID-19 USING HERBAL MEDICATION- A REVIEW

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Abstract

COVID-19 can be viewed as a worldwide health emergency with wide-ranging effects on all elements of life, including health, the economy, education, and other areas, for the entire world, including India. Worldwide, the use of herbal medicine is rising as one complementary and alternative medicine component after COVID-19. Traditional healers have been prescribing dietary plants and herbal products for a variety of ailments for thousands of years. World populations use herbal treatments as an alternative to conventional medicine to treat, prevent, or help with disease symptoms, increase energy, relax, and it is thought that these medicines have no negative side effects. This review's objective is to highlight the main herbal products, their sources, traits, and potential antiviral effects with regard to COVID-19. Many herbal plants and their active components have been examined using various disease models and have been found to have disease-preventing properties. Similar to this, various herbal plant extracts or their purified fractions have undergone molecular testing and have been shown to have anti-stress properties via raising neurotransmitter levels. They have also been utilised as immune system boosters. In this article, a few herbal medicinal plant examples have been discussed. Using English key phrases, publications on herbal products with antiviral activity were searched across a number of databases, including Web of Science, Google Scholar, Medline, Scopus, and PubMed. Citrus Spp., orange (*C. sinensis*), *Allium sativum*, *Allium cepa*, *Menthapiperita*, and *Nigella sativa* are some of the antiviral medicinal plant species. They are the most attractive herbal beverage or fruit that can provide useful adjuvant components in COVID-19 management.

Keywords: COVID-19, Herbal medicine, Energy, Immune system and disease

9. VECTOR BORN DISEASES

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Abstract

Vectors are transmitted diseases from person to person that diseases are known as vector borne diseases. Out of six vectors borne diseases of India, including tropical and subtropical region this paper deals with present scenario of three vectors borne diseases namely Malaria, Dengue and Lymphatic filariasis. Malariain 2022 there were over 45 thousand reported cases of malaria in India. In 2021 however, the number of cases were higher with over 160 thousand cases. In 2021, 65 people died due to malaria across India. An estimated 247 million cases and 619,000 deaths due to malaria. Karnataka accounted for only 1,701 cases, which is just 0.9% of cases in the country. Between 1 January and 20 November 2022, a total of 52 807 dengue cases including 230 related deaths were reported by the Ministry of Health & Family Welfare Government data showed that 346 deaths were reported across the country due to dengue in 2021 as against 56 deaths in 2020 and 166 deaths in 2019. From 1 January 2022 and as of 31 December 2022, 1,25,888 cases of dengue and 1 082 deaths have been reported in India and the Karnataka state recorded 7,393 cases of dengue and seven deaths, in 2021. So far in 2022 dengue cases recorded is 4,738 and four deaths in Karnataka. In mainland India, *Wuchereria bancrofti* transmitted by the ubiquitous vector, *Culex quinquefasciatus* has been the most predominant infection contributing to 99.4% of the problem in the country. Three nematode parasites causing LF in human are *Wuchereria bancrofti*, *Brugiamalayi* and *Brugiatimori*. Of these, only *Wuchereria bancrofti* and *Brugiamalayi* are found in India. Filariasis is a major public health problem in India and in spite of existence of the National Filaria Control Programme since 1955, currently there may be up to 31 million microfilaraemics, 23 million cases of symptomatic filariasis, and about 473 million individuals potentially at risk of infection. These three vector borne diseases in India comparing with Karnataka state are reviewed in this paper.

Key Words: Diseases, Karnataka, Parasites, Dengue and Public health

10. PRESCRIPTION PATTERN OF ANTIMICROBIAL IN GENERAL MEDICINE

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Abstract

Excessive use of antibiotics is one of the common problems in health care system, Improper or unnecessary prescribing of antibiotics leads to emergence of antimicrobial resistance. Emergence of antimicrobial resistance will result in increase in morbidity, mortality and health care costs. Preventing inappropriate antimicrobial usage can possibly prevent drug resistance. Hence optimum use of antimicrobial can cause a great impact in improving health care system. Also the increase in number of infections increases the problem of antimicrobial resistance. Hence the current study aims to assess the prescribing pattern of antimicrobial in in-patient department of tertiary care hospitals. To analyse the prescription pattern of antimicrobial in department of general medicine. To analyse the patients with the type of infections receiving more number of antimicrobial. To identify the adverse drug reactions associated with use of antimicrobial. The proposed prospective study was conducted over 150 patients of General medicine department in Aster CMI hospital, Bangalore for duration of 6 months. Our study reveals out of a total of 150 prescriptions, number of antimicrobial prescribed were 185. Majority of prescriptions contain only one antibiotic. Most common type of infections for which antibiotics was prescribed were UTI (24.83%) followed by RTI (23.48%). Cephalosporins (54.83%) were the most commonly prescribed class of antimicrobial followed by Penicillin + Betalactamase inhibitors (18.81 %). Ceftriaxone (43.5%) of third generation cephalosporins was the drug of choice in majority of cases followed by Cefoperazone (29.7 %). Number of antibiotics prescribed was found to be rational. Out of 150 prescriptions analyzed from General Medicine department, it was observed that prescribing of antimicrobial was appropriate and rational but one minor ADR was reported which was then resolved by implementing proper intervention. Hence appropriate prescribing of antibiotics would help in preventing drug resistance.

Key words: Antibiotics, Health, Inhibitor and ADR

11. STUDY OF SENSITIVITY PATTERN OF ANTIMICROBIALS PRESCRIBED IN ONCOLOGY DEPARTMENT

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Abstract

Antimicrobials are prescribed empirically and prophylactically without performing culture sensitivity tests in most of the cases. However, inappropriate prescribing pattern of antibiotics directs to increase in mortality, medical expenses and drug-resistant strains of bacteria. In neutropenic patients compared with non-neutropenic patient's gram-negative bacteria was most frequently isolated. Prevention of the emergence and dissemination of resistant microorganisms will lessen the adverse events. Antibiotic therapy on the initial use in febrile neutropenia episodes should be based on local bacterial susceptibility and sensitivity pattern to prevent failure of treatment with increased morbidity and mortality. This prospective study was done to describe the antimicrobial sensitivity pattern of common organisms in isolates of clinical samples of oncology patients. To assess the antimicrobial sensitivity pattern of common organisms in clinical samples of neutropenic and non-neutropenic patients admitted in oncology department. To describe the prescribing pattern of antimicrobial agents to identify source of the specimen collected for culture testing. To identify organisms causing common infection in neutropenic and non-neutropenic patients. The proposed prospective study was conducted over 145 patients of Oncology department in Aster CMI hospital, Bangalore for duration of 6 months. A total of 145 patients were included in the study. Out of 145, 82 patients was male and female consisted of 63 sample. 76.6% of the population was found to be non-neutropenic and 23.4% was neutropenic. Gram negative bacteria showed high resistance to ciprofloxacin and cefuroxime. Aminoglycosides like gentamycin exhibit resistance to gram positive bacteria. Multidrug resistance was reported among common bacterial isolates. The data was collected to identify the resistance pattern of antimicrobials. Antibiotic therapy on the initial use in febrile neutropenia episodes should be based on local bacterial susceptibility and sensitivity pattern to prevent failure of treatment with increased morbidity and mortality.

Key words: antibiotics, neutropenia, Organisms, Population and Therapy

12. IMMUNOLOGY

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Abstract

Immunology is to know how different antigens are detected and get penetrated by the immune system. The immune system has two fundamental lines of defence; innate and adaptive immunity. Antigens primarily fight with innate immunity and then by the secondary immune system, adaptive. Adaptive immune systems are antigen specific and are fought by antibodies. The immune system is also influenced by environmental conditions like temperature and season. Other than the above functioning system can provoke illness or disease, such as autoimmune disease, immunodeficiency and more. This presentation provides an overview on the basics of immunology and briefly explains the mechanisms involving both health and illness.

13. PUBLIC HEALTH AND WELLNESS

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Abstract

Public health the art and science of preventing disease, prolonging life and promoting physical and mental health, through the organized efforts and informed choices of society organizations Public and private communities and individuals. Analyzing the determinants of health of a population and the threats it faces is the basis for Public health. The public can be as small as a handful of people or as large as a village or an entire city in the case of a pandemic it may encompass several continents. The concept of health takes into account physical, psychological and social well-being. The public health discipline includes: biostatistics epidemiology health policy and management, social and behavioral sciences and environmental health science. The four domains of public health: health improvements, health protection, Health care, public health and Academic public health. The basic services of public health were vital statistics communicable disease control, public health laboratory services, child health services and public health education.

Key words: Health, Society, Psychological, Environmental and Disease

14. ANTHROPOGENIC ENVIRONMENT CHANGES

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Abstract

Anthropogenic changes are alterations that result from human action or presence. They may be deliberate, such as when land is cleared for agriculture, modifying landscapes and introducing new species. Anthropogenic changes may also be an unrecognized or poorly understood side-effect of human activity, as with the decreased biodiversity that accompanies increased urbanization or with much of the pollution resulting from industrialization and the technological advances of the twentieth century. Increased production of carbon dioxide and other greenhouse gases and the resulting alteration of global climate is a good example of anthropogenic change that has been slowly revealed over the past several decades. Much of the difficulty in understanding and measuring anthropogenic climate change is caused by the complexity of Earth systems involved and by the challenge of differentiating natural variation from anthropogenic change. The contents are Impacts on climate, Mining industry, Manufacturing, Transport, Military, Light pollution, Human overshoot, Fishing and Farming and Ecosystem impacts. Effects of climate change on public health: Climate change is already impacting health in a myriad of ways, including by leading to death and illness from increasingly frequent extreme weather events, such as heatwaves, storms and floods, the disruption of food systems, increases in zoonoses and food, water, vector-borne diseases, and mental health issues. Climate change is the most significant problem facing the world. Global warming is increasing day by day. If we cannot prevent it as soon as possible, our world will face undesirable consequences. Artificial intelligence and machine learning, which have been quite advanced recently is our immense weapon in the fight against climate change.

Key words: Anthropogenic, Biodiversity, Climate and greenhouse gases Artificial intelligence

15. STUDY OF IMMUNITY AND IMMUNE SYSTEMS

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Abstract

Immunology deals with study of immunity and immune systems of vertebrates. It broadly involves the resistance and protection offered by the host organism against the infectious diseases. It covers the development of the immune system as well as the malignant growth of immune cells. The infectious diseases are caused by pathogens; including viruses and bacteria. Aim to understand the interactions between these microorganisms and immune cells in order to develop vaccines and therapies against infectious diseases.

Keywords: Resistance, Epidemiology, Immunology, Malignant and Pathology

16. INFECTIOUS DISEASE IMPACT ON HUMAN POPULATION

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Abstract

Humans and microbes have engaged in an epic struggle for survival since human life began. Rapid microbial evolution and adaptation allow bacteria, viruses and parasites to overcome human defences (e.g. physiologic mechanisms and manmade drugs) and exploit human behaviours (e.g. sexual practices and methods of food production and preparation). Today, the increasing complexity of human behaviour coupled with our ability to change our natural environment has hastened the pace of disease emergence and re-emergence. Microbes cause diseases of global importance (e.g., HIV/AIDS, hepatitis C, rotavirus diarrheal disease; and the (H1N1) 2009 influenza pandemic). In 1993, for example, an Indian Health Service physician reported a cluster of fatal cases of unexplained respiratory disease in the south western United States that proved to be caused by a previously unrecognized Hantavirus. In 1999, the first US outbreak of West Nile encephalitis was identified when an infectious disease physician reported unusual neurologic disease in three elderly people who lived in the same area whose causative agent is carried by migratory birds in Africa, the Middle East, and Europe and transmitted to humans by mosquito bite – had never been reported in the Western hemisphere. Therefore, population increases will be associated with further stresses on resources (e.g., clean air, water, and food) and natural habitats (e.g., higher temperatures caused by global warming that allow disease-carrying mosquitoes to move into new areas). Moreover, as human cities expand into forested areas, increased contact between humans and wildlife may lead to human infection with previously unknown animal pathogens that can cause human disease. Intensified livestock production – both traditional and modern – to meet increasing demand may also facilitate the spread of new and re-emerging diseases.

Key words: Human, Environment, Microbes, Health, and wild life

17. IMPACT OF ANTHROPOGENIC SOURCES ON ENVIRONMENT

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Abstract

Anthropogenic environment is also called culturally modified environment or human modified landscapes. Its referring to environmental change caused or influenced by the people directly or indirectly. A major component of Anthropogenic climate change is global warming which refers to a gradual warming of the earth caused by an unnatural increase of the greenhouse effect as concentrations of greenhouse gases increase primarily from the burning of fossil fuels and deforestation, Anthropogenic environmental problems humans impact the physical environment in many ways; over population ,pollution, burning fossil fuels, and deforestation changes like these have triggered climate change, soil erosion, poor air quality. Anthropogenic process is those produced by man's activity in exploiting and modifying the environment.

Key words: Environment, Global warming, Deforestation, Fossil fuels and Human

18. HEALTH AND WELL-BEING IN VIROLOGY WITH RESPECT TO COVID-19

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Abstract

There was a new public health crisis threatening the world with the emergence and spread of 2019 novel coronavirus (2019-nCoV) or the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The virus originated in bats and was transmitted to humans through yet unknown intermediary animals in Wuhan, Hubei province, China in December 2019. There have been around 678,785,856 cases reported for the COVID-19 and reported 6,791,688 deaths. This disease is transmitted by the inhalation or contact with the infected droplets and the incubation period varies from 2 to 14 days. The symptoms are usually fever, cough, sore throat, fatigue, etc. The disease was mild in the most people. But in few people, it developed into its severity leading to pneumonia, acute respiratory distress syndrome (ARDS). Diagnosis is by demonstration of the virus in the respiratory secretions by special molecular tests. Common laboratory findings include normal/ low white cell counts with elevated C-reactive protein (CRP). The computerized tomographic chest scan is usually abnormal even in those with no symptoms. Treatment is essentially supportive. Prevention entails with home isolation of suspected areas with the positive cases. The virus spreads faster than its two ancestors the SARS-CoV and Middle East Respiratory Syndrome Coronavirus (MERS-CoV), but has lower fatality. The global impact of this new epidemic was uncertain.

Key words: 2019-nCoV, SARS-CoV-2, COVID-19, ARDS, CRP and MERS-CoV.

19. ANTI-FUNGAL PROPERTIES OF CASSIA FISTULA

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Abstract

Cassia fistula belongs to Leguminosae family and the antifungal activity of *Cassia fistula* was reported against various fungal strains, including those responsible for causing ringworm infections. In Ayurvedic medicine the plant has been used to treat a variety of infectious conditions. Various research has validated that phytoconstituents reported in *Cassia fistula* treats microbial, viral, fungal and various illness. The different portions of the plant species have exhibited antifungal properties, extraction of chrysophanol, anthraquinone glycosides from young maturing green pods and large quantity of sennoside A and B in leaves, alkaloids from flowers, Oxyanthraquinone and flavonol glycosides from barks and other major antifungal, antibacterial, antiviral phytoconstituents were reported. Extraction of active phytochemicals through various methods were reported, Decoction by boiling leaves and bark of *Cassia fistula* to treat ringworm diseases. Infusion to prepare tea, Oil extraction by leaves or bark in oil and Tincture is a method soaking of plants in alcohol these are the methods to treat ringworm diseases. In Ayurvedic medicine, *Cassia fistula* is known as "Aragvadha" and has been used as a laxative, diuretic, and blood purifier. The plant has also been used to treat skin diseases such as ringworm infections, as well as digestive disorders and respiratory infections. The root has purgative effects; treats heart related diseases, fever, biliousness, nausea, retained excretions among other conditions. The fruit pulp is laxative and analgesic; it can relieve obstructions in the chest, the accumulated heat within the circulatory system as well as the intense heat accumulated within the liver tissues. The extracts from the leaves are effective in treating ringworm infections, cough in addition to snakebites. It treats stiffness of joints, arthritis, cervical pain, constipation, coryza. It helps in treatment of earache, fever, headache, skin disorders, irritation swelling, pain. It proved very effective during treatment of ringworm, inflammation in hand or feet and addresses sneezing, nasal obstruction, tonsillitis and common cold. Diluted suspensions of different parts of *Cassia fistula* are used in homeopathic medicine and remedy of various clinical conditions.

Key words: *Cassia fistula*, laxative, analgesic, diuretic, chrysophanol, anthraquinone glycosides



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