



# J.K.K.MUNIRAJAH MEDICAL RESEARCH FOUNDATION'S ANNAI JKK SAMPOORANI AMMAL COLLEGE OF PHARMACY

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Approved by : Pharmacy Council of India, New Delhi & The Tamilnadu Dr.M.G.R Medical University, Chennai.

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Ph : 9789456750, 9843035735, 9789456737.

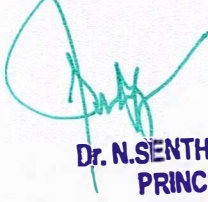
**Dr. N.SENTHIL KUMAR, M.Pharm.,Ph.D.,**  
**Principal**

## 3.3.2.1. List of National /International Journal Papers Published - Academic Year 2022-2023

### CONSOLIDATED LIST OF PAPERS PUBLISHED

Number of Research Papers Published in the Journal Notified on UGC Care List during 2022-2023 is **18**



  
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**Principal**

## 3.3.2.1.List of National /International Journal Papers Published Academic Year 2022-2023

| S.No | Title of paper   | Name of Author    | Department of Teacher | Name of Journal  | Year of Publication | ISSN/IS BN Number   |
|------|--|-------------------|-----------------------|--|---------------------|---------------------|
| 1    | Prevalence of Self Medication practice among the population of Tiruppur District.  | K C.Arul prakasam | Pharmacy Practice     | Mukt Shabd Journal   | 2022-2023           | 2347-3150           |
| 2    | Clinical patterns of lower respiratory tract infection and their prescription pattern analysis of pediatrics patients in a tertiary care hospital. | K C.Arul prakasam | Pharmacy Practice     | Journal of Hospital Pharmacy                                       | 2022-2023           | 1945-1253, 00185787 |
| 3    | Evaluation Study on the Urinary Tract Infection (UTI) and Its Co-Morbidities in Relation to the Other Cases.                                       | K C.Arul prakasam | Pharmacy Practice     | International Journal of Pharmaceutical Research and Applications: | 2022-2023           | 2456-4494           |
| 4    | Assessment of surgical antibiotic prophylaxis in the surgery ward of a tertiary care hospital – an observational study                             | K C.Arul prakasam | Pharmacy Practice     | Gis Science Journal  | 2022-2023           | 1869-9391           |
| 5    | Assessment Of Adverse Drug Interactions During In The COVID-19   | K C.Arul prakasam | Pharmacy Practice     | International Journal of Medical Science in Clinical Research and  | 2022-2023           | 2581-8945           |



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|    | Vaccine And Public Understanding Of Vaccine In South India.  |                   |                   | Review.  |           |           |
|----|--|-------------------|-------------------|--|-----------|-----------|
| 6  | Prevalence and assessment of Self Medication practice along with associated factors among the population of Namakkal District    | K C.Arul prakasam | Pharmacy Practice | Gis Science Journal  | 2022-2023 | 1869-9391 |
| 7  | Assessing The Prevalence Of Respiratory Symptoms And Quality Of Life Among Textile Mill Workers - Namakkal District, Tamil Nadu. | K C.Arul prakasam | Pharmacy Practice | Gis Science Journal  | 2022-2023 | 1869-9391 |
| 8  | Guillain Barre Syndrome - A Review.  | K C.Arul prakasam | Pharmacy Practice | International Journal of Trend in Scientific Research and Development (ijtsrd) | 2022-2023 | 2456-6470 |
| 9  | A Review on Osteoporosis   | K C.Arul prakasam | Pharmacy Practice | International Journal of All Research Education and Scientific Methods         | 2022-2023 | 2455-6211 |
| 10 | Assessing the Health-Related Quality of Life in Patient With Rheumatoid  | A Srinivasan      | Pharmacy Practice | Gis Science Journal  | 2022-2023 | 1869-9391 |



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|    |  |                  |                          |   |           |           |
|----|--|------------------|--------------------------|---|-----------|-----------|
|    | Arthritis: Cross-Sectional Study   |                  |                          |   |           |           |
| 11 | Basics of Sleep  | A Srinivasan     | Pharmacy Practice        | Gis Science Journal   | 2022-2023 | 1869-9391 |
| 12 | A comparative study of knowledge, attitude and perception of jaundice among paramedical and non-paramedical students   | A Srinivasan     | Pharmacy Practice        | International journal of pharmaceutical sciences and research | 2022-2023 | 0975-8232 |
| 13 | A community based comparative study of knowledge, attitude and preventive practice of osteoporosis - before and after pharmacist counseling                            | A Srinivasan     | Pharmacy Practice        | Gis Science Journal   | 2022-2023 | 1869-9391 |
| 14 | The Design, Synthesis, and Evaluation of Diaminopimelic Acid Derivatives as Potential <i>dapF</i> Inhibitors Preventing Lysine Biosynthesis for Antibacterial Activity | T. Venkatachalam | Pharmaceutical chemistry | Antibiotics   | 2022-2023 | 2079-6382 |



  
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|    |   |                  |                          |  |           |           |
|----|---|------------------|--------------------------|--|-----------|-----------|
| 15 | A narative review on etiopathogenesis, clinical manifestations and management of parapneumonic effusions with little insight on its diagnostic procedures | T. Venkatachalam | Pharmaceutical chemistry | NeuroQuantology                                    | 2022-2023 | 1303-5150 |
| 16 | Extraction and Investigation of In-Vitro Antioxidant and Antimicrobial activity of Acacia Pennata   | T. Venkatachalam | Pharmaceutical chemistry | NeuroQuantology                                    | 2022-2023 | 1303-5150 |
| 17 | Protective effect of ceiba pentandra(L). Gaertn on CCl4-induced oxidative stress and liver damage Inrats  | E Thilagam       | Pharmacognosy            | Pharmacological Research - Modern Chinese Medicine | 2022-2023 | 2667-1425 |
| 18 | Medicinal plants of solanum species. The promising sources of phyto-insecticidal compounds  | E Thilagam       | Pharmacognosy            | Journal of tropical medicine                       | 2022-2023 | 1687-9694 |



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Scopus Preview Author Search Sources

Source details

**Hospital Pharmacy**

Scopus coverage years: from 1973 to Present

Publisher: Thomas Land Publishers Inc.

ISSN: 0018-5787 E-ISSN: 1945-1253

Subject area: (Health Professions: Pharmacy) (Medicine: Pharmacology (medical)) (Pharmacology, Toxicology and Pharmaceutics: Pharmacology)

Source type: Journal

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SJR 2022 0.243

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Source details

**GIS-Zeitschrift fur Geoinformatik**

Scopus coverage years: from 2006 to 2009, from 2011 to 2022

Publisher: Wichmann, VDE

ISSN: 1869-9391 E-ISSN: 2698-4571

Subject area: (Social Sciences: Geography, Planning and Development) (Computer Science: Information Systems)

Source type: Journal

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Source details

Antibiotics

Open Access

Scopus coverage years: 2010, from 2012 to Present

Publisher: Multidisciplinary Digital Publishing Institute (MDPI)

E-ISSN: 2079-6382

Subject area: (Pharmacology, Toxicology and Pharmaceutics: General Pharmacology, Toxicology and Pharmaceutics) (Medicine: Pharmacology (medical))  
 (Medicine: Infectious Diseases) (Medicine: Microbiology (medical)) View all

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Scopus Preview

Source details

**NeuroQuantology**

Scopus coverage years: from 2007 to 2022  
(coverage discontinued in Scopus)

Publisher: Anka Publishers

ISSN: 1303-5150

Subject area: [Physics and Astronomy: Atomic and Molecular Physics, and Optics](#) [Neuroscience: Cognitive Neuroscience](#)  
[Neuroscience: Developmental Neuroscience](#)

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SJR 2021: 0.285

SNIP 2022: 0.380

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**NeuroQuantology**  
 Scopus coverage years: from 2007 to 2022  
 (coverage discontinued in Scopus)  
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Source type: Journal

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| SJR 2021  | 0.285 |
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Scopus Preview Author Search Sources

Source details

**Pharmacological Research - Modern Chinese Medicine**

Open Access

Scopus coverage years: from 2021 to Present

Publisher: Elsevier

E-ISSN: 2667-1425

Subject area: (Pharmacology, Toxicology and Pharmaceutics: General Pharmacology, Toxicology and Pharmaceutics) (Medicine: Complementary and Alternative Medicine) (Medicine: Pharmacology (medical))

Source type: Journal

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SJR 2022 0.157

SNIP 2022 0.318

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Scopus Preview Author Search Sources

Source details

**Journal of Tropical Medicine**

Open Access

Scopus coverage years: from 2010 to Present

Publisher: Hindawi

ISSN: 1687-9686 E-ISSN: 1687-9694

Subject area: (Immunology and Microbiology: Parasitology) (Immunology and Microbiology: Microbiology)

Source type: Journal

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## Prevalence of Self Medication practice among the population of Tiruppur District

Arul Prakasam K.C<sup>1</sup>, Pezhman ghadami<sup>2</sup>, Neda mehrafar<sup>2</sup>

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2. Pharm D Intern, JKKMMRF's Annai JKK Sampoorani Ammal College of Pharmacy, Komarapalayam, Tamil Nadu, India

[Affiliated to the Tamil Nadu Dr.M.G.R. Medical University, Chennai, Tamil Nadu- 600032]



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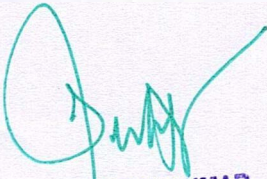
Dr. Arul Prakasam K C, M. Pharm, Ph. D  
Professor and Head of the department,  
JKKMMRF's Annai JKK Sampoorani Ammal College of Pharmacy, Komarapalayam,  
Tamil Nadu- 638 183

**Abstract:**

**Background and objectives:** Self-medication is a widespread method of treating minor illnesses in India. The purpose of this study was to figure out how common self-medication was among the people living in the Tiruppur district. The perspective and attitude toward self-medication are also determined by this study. **Materials and methods:** A cross-sectional study design was conducted to describe the prevalence of self-medication practice among the population and the relationship between the self-medication-related variables and demographic variables. **Results:** Among 642 participants, 452 participants practiced self-medication, and 190 participants never practiced self-medication. study shows, that 42.7% of male and 57.3% of female participants practice self-medication. Shows that the majority of them were literate 95.14% and 4.86% were illiterate and 47.56% of participants were UG level, 22.59% were PG level and 1.99% were Ph.D. level. 27.43% reported knowing about the medicine by consulting a pharmacist. study shows there is a significant association between ailments and gender and there is a significant association between ailments and education status. **Conclusion:** The public has to be educated on the need for correct medication usage, as irrational medication use is caused by a lack of understanding about the dangers that can result from self-medication without a professional diagnosis.

**Keywords :** selfmedication, prevalence, ailments, Tiruppur district, Irrational use



  
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Journal of Hospital Pharmacy  
An Official Publication of Bureau for Health & Education Status Upliftment  
(Constitutionally Entitled As Health-Education, Bureau)

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### How much fluid is too much fluid in a pulmonary stenosis parturient.?

<sup>1</sup>Barkha Bharti, <sup>2</sup>Wridal Dhor, <sup>3</sup>Vijay Adabala, <sup>4</sup>Mohammed Shafiq Shaqikan & <sup>5</sup>Deepika Karjigi

<sup>1</sup>DA Anaesthesiology, Junior Resident, AIIMS Rishikesh  
<sup>2</sup>MD Anaesthesiology, Assistant Professor AIIMS Rishikesh  
<sup>3</sup>MD Anaesthesiology, PDCC Pain Medicine, Senior Resident, AIIMS Rishikesh  
<sup>4</sup>MD Anaesthesiology, Senior Resident, AIIMS Rishikesh  
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Email Id: servicehehb@gmail.com

#### ABSTRACT

Cardiovascular changes in pregnancy and heart disease are a nightmare for an anaesthesiologist. We report here a case of severe pulmonary stenosis who underwent emergency caesarean section under general anaesthesia with satisfactory maternal and neonatal outcomes.

**KEYWORDS:** Caesarean section, general anaesthesia, pulmonary stenosis.

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### Clinical Patterns of Lower Respiratory Tract Infection and their Prescription Pattern Analysis of Pediatrics Patients in a Tertiary Care Hospital

<sup>1</sup>Arul Prakashan K C\*, <sup>2</sup>Senthilkumar N, <sup>3</sup>senthilkumar B, <sup>4</sup>Velsareya R.

<sup>1</sup> Professor, Department of Pharmacy Practice, JKKMMRF's Annal JKK Sampoorani Annal College of Pharmacy, Komarapalayam, Tamil Nadu, India.  
<sup>2</sup> Pharm D Intern, Department of Pharmacy Practice, JKKMMRF's Annal JKK Sampoorani Annal College of Pharmacy, Komarapalayam, Tamil Nadu, India

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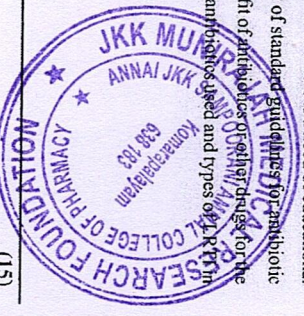
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#### Abstract:

**Background:** Lower respiratory tract infection (LRTI) is infection below the level of the larynx and may be taken to include bronchiolitis, bronchitis and pneumonia. The presentation of these conditions will depend on age, infecting organism and site of infection. LTRI is the largest cause of morbidity among children under five across the world. The use of antimicrobial agents has become a routine practice for the treatment of pediatric illnesses, and antibiotics are among the most commonly prescribed drugs in pediatrics. Rational use of antibiotic is very necessary to avoid resistance. **Purpose of study:** The aim of the study to analyse the prescription pattern used in pediatric patients with lower respiratory tract infections. **Methods:** Data collected will subjected to descriptive statistical analysis using Microsoft Excel and GraphPad InStat. Results will be in numbers and percentages. Demographic characteristics and number of drugs and number of antibiotics per patient per prescription will be express in mean ± standard deviation (SD) with respect to the previous similar studies. **Results:** In this study we found that Amoxicillin + Clavulanic acid (31.32%) followed by azithromycin (25.99%) and ampicillin (15.55%) were the most frequently prescribed antibiotics. **Conclusion:** It was observed that prescription from NLEM was 3.35 drugs, suggesting rational approach in giving the treatment, but prescription by generic name was not there which needs the improvement. There is a need of educational programmes in order to bring rational use of antibiotics that requires development of standard guidelines for antibiotic prescription. It is also needed to create awareness in parents regarding the risk-benefit of antibiotics of other drugs for the self-limiting condition. This study will help the clinicians to know about pattern of antibiotics used and types of LRTI in pediatric patient.

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## Evaluation Study on the Urinary Tract Infection (UTI) and Its Co-Morbidities in Relation to the Other Cases

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### ABSTRACT

#### BACKGROUND

A urinary tract infection (UTI) is a very common type of infection in the urinary system (S. Lee & Jennifer Le, 2018).

A urinary tract infection (UTI) is an infection of the urinary system. This type of infection can involve the urethra (a condition called urethritis), kidneys (a condition called pyelonephritis) or bladder, (a condition called cystitis).(GuptaK,2018).

Several factors such as gender, age, race, circumcision, HIV, diabetes, urinary catheter, genitourinary tract abnormalities, pregnancy, infants, elderly, and hospitalization status bear significant risk for recurrent UTIs.

The commonest pathogenic organism isolated in UTI is E. coli followed by K. pneumoniae, Staphylococcus, Proteus, Pseudomonas, Enterococcus, and Enterobacter. (Theodor Escherich 1857-1911).

Symptoms typically include needing to urinate often, having pain when urinating and feeling pain in the side or lower back. Most UTIs can be treated With an antibiotic. (Shulman, Friedmannetal. 2007).

### I. INTRODUCTION

#### AIM:

•To evaluate and observe of the urinary tract infection and its co-morbidities in relation to the other cases.

#### OBJECTIVES:

•To study the prevalence of urinary tract infection(UTI).

•To understand the causes associated with the urinary tract infection (UTI).

•Identify the co-morbidity of the urinary tract

infection (UTI) with other diseases such as Diabetes mellitus, hypertension, gastritis, colitis, cholelithiasis, cholecystitis, scrub typhus, asthma, obesity, and pregnancy.

• Assess the change in resistance and sensitivity of uropathogens isolated from the urine.

#### KEYWORDS:

UTI,  
 Urinary tract infection,  
 Evaluation study on the urinary tract infection (UTI) and its co-morbidities in relation to the other cases,  
 Cystitis,  
 Pyelonephritis,  
 Urethritis,  
 Ureteritis

#### ABBREVIATIONS:

|         |   |
|---------|---|
| UTI     | Urinary Tract Infection                     |
| CAUTI   | Catheter Associated Urinary Tract Infection |
| E.Coli  | Escherichia coli                            |
| AFI     | Amniotic Fluid Index                        |
| EPN     | Emphysematous Pyelonephritis                |
| NEPN    | Non Emphysematous Pyelonephritis            |
| USG-KUB | Ultra sonogram - Kidney Urinary Bladder     |
| XGP     | Xantho granulomatous Pyelonephritis         |

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## Assessment of surgical antibiotic prophylaxis in the surgery ward of a tertiary care hospital – an observational study

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### ABSTRACT:

*Surgical antimicrobial prophylaxis is defined as the use of antibiotics to prevent infections at the surgical site. Prophylaxis has become the standard care for contaminated, clean-contaminated surgery and surgery using artificial device insertion. The objective of this study is to assess surgical antibiotic prophylaxis in the surgery ward of a tertiary care hospital. A Prospective, Observational Study design was conducted in a surgery department of the tertiary care hospital in Erode. We recruited 216 patients according to the inclusion criteria. Out of 216 patients, 150 patients came under prophylactic therapy, 62 patients under the therapeutic antibiotic and 4 patients under no antibiotics given. The study concludes that the current practice of Surgical antibiotic prophylaxis in a tertiary care hospital seems to be slightly comparable with standard guidelines about the selection of antibiotics and preoperative timing. The extensive use of third-generation cephalosporins and the needless postoperative prophylaxis are the major concern of this study. Using the wrong antibiotic, administering a drug at the incorrect time, antimicrobial prophylaxis, and prolonged duration of postoperative antimicrobial prophylaxis were problems identified in the practice of SAP. Therefore, all institutions should implement evidence-based protocols for preoperative antibiotic prophylaxis and continue to prospectively monitor compliance to identify any inconsistencies that could result in inappropriate antibiotic prophylaxis for patients.*

**KEYWORDS:** *surgical antibiotic prophylaxis, tertiary care hospital, infections, pre-operative, post-operative*



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## ASSESSMENT OF ADVERSE DRUG INTERACTIONS DURING IN THE COVID-19 VACCINE AND PUBLIC UNDERSTANDING OF VACCINE IN SOUTH INDIA

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### ABSTRACT:

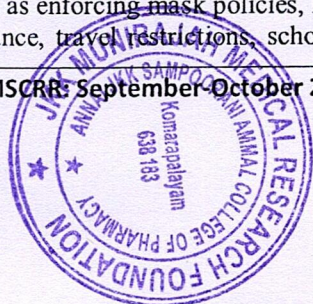
**Background:** SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2) is a recently detected member of the human coronavirus family that was discovered during a highly transmissible respiratory disease outbreak in Wuhan, China in 2019. Despite the lack of an established antiviral treatment for COVID-19, many vaccines experiment was launched. Various vaccination candidates for emergency use authorization (EUA) had been announced by some international health agencies by the beginning of 2021. COVID-19 vaccines are believed to improve vaccinated individual's immune systems, providing protection and a more long-term solution. **Purpose of study:** There is few research on the adverse effects/reactions and awareness of COVID-19 vaccines, the goal of this study was to investigate the severity, causality of adverse reactions/effects and compare the effect of COVID-19 vaccine among the general public. **Methods:** The data collection form has been prepared. The data will be collected through the vaccination site and the ADR (adverse drug reaction) will be monitored through phone calls. The severity of the ADR was assessed by using MODIFIED HARTWIG AND SIEGEL SCALE and the causality was assessed by using NARANJO SCALE. Google forms have been created and thereby assessing how people aware of the COVID-19 vaccine. **Results:** A total 1125 people in Tamilnadu were assessed over a period of 6 months. All participants were reported that they experience at least one ADR. the range of COVID-19 vaccine adverse reactions were pain at injection site by 935 out of 1125 participants; body pain reported by 576 out of 1125; fever reported 493 out of 1125; headache reported by 326 out of 1125; chills reported by 103 out of 1125 participants. **Conclusion:** Majority of reported adverse reactions were described as mild to moderate reactions.

**Key Words:** COVID-19 vaccine ADR, severity, COVID-19 vaccine awareness, causality, pregnancy, lactation

### INTRODUCTION:

Coronavirus disease (COVID-19) is a devastating viral infection that still affects many places throughout the world. SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) is a novel coronavirus strain that has spread over the world, posing a huge public health threat (Pal M, Berhanu G and Desalegn C, 2020). On March 11, 2020, the World Health Organization (WHO) designated the COVID-19 epidemic to be a pandemic (Cucinotta D and Vanelli M, 2020). Most governments' ground strategy was to decrease disease transmissibility, frequently by non-pharmaceutical interventions (NPIs), such as enforcing mask policies, hand sanitization, social distance, travel restrictions, school closures, and partial

or complete lockdowns (Nicola M et al., 2020). Nonetheless, it is obvious that humans cannot sustain long-term social isolation or the use of face masks, and there are presently no particular antiviral drugs for COVID-19. As a result, the only way to stop this pandemic is to produce a COVID-19 vaccination that has both therapeutic and socioeconomic advantages (Sharun K et al., 2020). COVID-19 vaccines was expected to strengthen the immune system of the vaccinated individuals offering protection and a more permanent solution. In the United Kingdom and other nations, a COVID-19 vaccination is being used (Nisha jha et al., 2021). On January 16, 2021, India began its COVID-19 immunization campaign. Healthcare and



## Prevalence and assessment of Self Medication practice along with associated factors among the population of Namakkal District

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**Abstract :**

**Background and objectives :** In India self medication is an common practice of treating minor ailments. This study was aimed to determine the Prevalence and assessment of self medication practice along with associated factors among the population of Namakkal district. This study also determines the perception and attitude towards practice of self medication. **Materials and methods:** A cross sectional study design was conducted to describe the prevalence and assessment of self medication practice among the population and the relationship between the self medication related variables and demographic variables. **Results:** Among 852 participants, 633 participants were practiced self- medication and 219 participants never practiced self-medication. study shows, that 37.4% of male and 62.2% of female and 0.3% of transgender participants practice self-medication. Shows that majority of them were literate 93.5% and 6.5% were illiterate. 21% were 12<sup>th</sup> and below, 46.4% were UG level, 24.6% were PG level and 1.6% were PHD level. 32.7% were reported know about the medicine by consult a pharmacist. study shows there is a significant association between the ailments and gender and there is a significant association between ailments and education status. **Conclusion:** Irrational use of medicine is due to lack of knowledge about the complications that can occur by practicing self medication without proper diagnosis, this indicates the need for an educational campaign on necessity of proper medication use among the public.

**Keywords :** selfmedication, prevalence, ailments, namakkal, Irrational use



  
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## Assessing the prevalence of respiratory symptoms and quality of life among textile mill workers - Namakkal district, Tamil nadu

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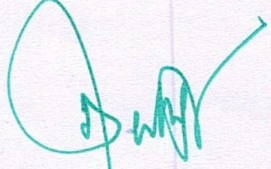
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Abstract:



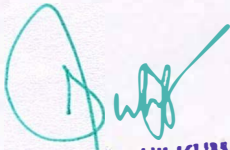
  
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The prevalence of occupational lung disease among workers in various textile mills is a significant problem. Long-term exposure to cotton dust can cause an abnormally large annual loss of forced expiratory volume in one second (FEV1) and a higher proportion of people with persistent respiratory problems. People exposed to cotton dust also reported airway allergies and a positive skin reaction. The objective of the study is to assess the prevalence of respiratory symptoms among textile mill workers in ,Namakkal district -Tamil Nadu. 400 workers were included in this study . Prevalence monitoring data was collected via pre-tested and structured interviewer-administered questionnaire adopted from the American Thoracic Society division of lung disease and quality of life was assessed through Rand 36 questionnaire. The study shows nearly 91.9% of the subjects had respiratory complaints . Majority of the workers experienced breathlessness and cough. Age, educational status, experience, smoking, alcohol habits and usage of mask were significantly associated with the respiratory symptoms. Workers who were between age 18-30, educated above secondary, with experience  $\leq 5$ , working in weaving section , who were without respiratory symptoms and using mask experience better quality of life. This study concluded that the level of respiratory symptoms in the textile mill workers was relatively high. Educating the workers about the consequence of cotton dust exposure, encourage the use of masks and the provision of personal protective equipments ( mask) are the important task to be followed to reduce respiratory symptoms in textile mills.

**Key words:**

Textile mills, Cotton dust ,Respiratory symptoms, Personal protective equipments , Quality of life



  
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## Guillain Barre Syndrome - A Review

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### ABSTRACT

Guillain Barre Syndrome is characterized by the emergence of distal, relatively symmetrical paraesthesia. It occurs when the body's defensive mechanisms mistakenly assault parts of the neurological system. It is classified into subtypes as Acute inflammatory demyelinating polyneuropathy (AIDP), Acute motor axonal neuropathy (AMAN), Acute motor sensory axonal neuropathy (AMSAN), Pharyngeal-cervical brachial variant, and Miller Fisher syndrome. GBS can be caused by a variety of infections such as Campylobacter jejuni infection, cytomegalovirus, Epstein-Barr virus, and Human Immunodeficiency virus. It mainly causes the motor, sensory, and autonomic dysfunction. In the diagnosis of GBS, a lumbar puncture is an important diagnostic tool. Anti-GD1a is linked to the GBS subtype AMAN. Miller-Fisher syndrome is linked to anti-GQ1b. Its treatment includes, Plasma exchange, Immunoglobulin, and corticosteroids. As it is incurable, supportive care and respiratory support is recommended.

**KEYWORDS:** Guillain Barre Syndrome, Axonal neuropathy, Demyelination, Paraesthesia

### INTRODUCTION:

Guillain-Barré syndrome or GBS is a demyelinating polyneuropathy that was first identified in 1859. Ascending motor weakness, sensory and autonomic dysfunction are common symptoms, which are often followed by prodromal disease. Campylobacter jejuni, cytomegalovirus (CMV), Mycoplasma pneumoniae, Epstein-Barr virus, and influenza virus have all been found as antecedent infections. GBS has also been linked to vaccination and parturition. GBS is characterized by the emergence of distal, relatively symmetrical paraesthesia. Progressive limb weakening occurs in conjunction with or shortly after sensory difficulties. Patients are usually able to determine a specific day when sensory and motor abnormalities commenced. In half of the patients, pain is a significant factor. (1). GBS occurs when the body's defensive mechanisms mistakenly assault parts of the neurological system. The myelin coating around the nerve may be damaged as a result of an autoimmune reaction. This causes nerve inflammation, which causes a conduction block.

Severe cases induce subsequent axonal degeneration, which causes muscle weakness or paralysis, among other symptoms. The hallmark is acute paralysis with loss of tendon reflexes that develops over days or weeks. The most common symptoms are ascending paralysis weakness that starts in the feet and hands and progresses to the trunk. Some subtypes produce changes in sensation or discomfort, as well as autonomic nervous system malfunction. An infection is frequently the cause of the condition. It is the most prevalent cause of paralysis that is not caused by trauma. It has the potential to cause life-threatening complications in some people. (4) This potentially fatal illness is quite uncommon, affecting about one or two people per 100,000 worldwide, with slightly more males affected than females. All age groups are susceptible; the rate of occurrence increases with age, with a slight peak among young people. Although there is no cure for the condition, there are numerous therapies that can help to alleviate symptoms and shorten the length of the illness. (2)

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# A Review on Osteoporosis

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\*\*\*\*\*

## ABSTRACT

Osteoporosis, which is characterised by increased bone fragility and is caused by a variety of factors such as menopause and ageing, is the most common chronic metabolic bone disease. In their lifetime, one in every three women over the age of 50 and one in every five men will suffer from osteoporosis. Every fracture signals the onset of a new one. There are no clinical signs or symptoms of osteoporosis until a fracture occurs. Osteoporosis weakens bones and thus commonly causes fragility fractures, despite the fact that it is not harmful in and of itself. These can be the beginning of a series of fractures, leading to deterioration and loss of independence. Furthermore, osteoporosis leads to a lower quality of life, a longer disability-adjusted life span, and a significant financial burden on the health-care systems of countries that are accountable for such individuals. Osteoporosis can be avoided if the condition is diagnosed early, before fractures occur, and the bone mineral density is assessed, as well as early therapy. Where fracture liaison services exist, they are a well-known resource for systematically identifying, assessing, treating, and referring patients.

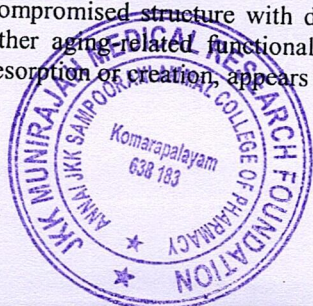
**KEYWORDS:** Osteoporosis, Bone Mineral Density, T-Score, Bisphosphonates

## INTRODUCTION

Osteoporosis is a bone disease that causes low bone mineral density (BMD), impaired bone microarchitecture/mineralization, and/or decreased bone strength, all of which increase the risk of fracture. This asymptomatic condition frequently goes undiagnosed until it causes a low-trauma fracture of the hip, spine, proximal humerus, pelvis, and/or wrist, which often necessitates hospitalisation. [1,2] Low bone mass, deterioration of bone tissue, and disruption of bone microarchitecture are all symptoms of osteoporosis, which can lead to decreased bone strength and an increased risk of fractures. [3] Osteoporosis is a silent disease until it is aggravated by fractures, which can develop after minor trauma or without trauma in rare circumstances. Fractures are prevalent and impose a significant medical and personal hardship on the elderly who suffer from them, as well as a significant economic burden on the country. Before a fracture occurs, osteoporosis can be prevented, diagnosed, and treated. Importantly, there are effective treatments to reduce the risk of additional fractures even after the first one has happened. Osteoporosis prevention, detection, and treatment should be a requirement for primary care physicians. [1] Patients with related fractures experience significant pain, suffering, disability, and, in some cases, death. Furthermore, increased longevity has led in an increase in the number of older individuals around the world; in India, life expectancy is currently about 67 years and is expected to rise to 71 years by 2025 and 77 years by 2050. Furthermore, approximately 10% of the Indian population is over 50 years old at the moment; but, by 2050, this proportion is expected to rise to 34%. As a result of increased lifespan and a larger proportion of the Indian population over the age of 50, the number of people affected by osteoporosis is anticipated to rise. According to estimates from 2013, 50 million persons in India had T-scores of -1. [5, 6, 7, 8] Although osteoporosis is most commonly associated with women, it can also affect men, with an estimated one in every five Americans suffering from osteoporosis or low BMD. Apart from being the leading cause of fractures in the elderly, osteoporosis is also strongly linked to people being bedridden, which can result in catastrophic consequences. [4] Bone tissue is continuously lost and restored by resorption and production; bone loss occurs when the resorption rate exceeds the creation rate. From birth until maturity, bone mass is moulded (grows and gets its final shape): bone mass reaches its peak (referred to as peak bone mass (PBM) at puberty, after which bone mass begins to deteriorate. Genetics, health during growth, nutrition, endocrine state, gender, and physical activity all have a role in peak bone mass. Bone remodelling, which entails removing old bone and replacing it with new bone, is used to repair microfractures and keep them from becoming macrofractures, so contributing in the maintenance of a healthy skeleton. Menopause and growing older produce an imbalance in resorption and creation rates, with resorption exceeding absorption, increasing the risk of fracture. Certain variables that cause greater resorption than creation cause bone loss, exposing the microarchitecture. Individual trabecular plates of bone are lost, resulting in an aesthetically compromised structure with dramatically reduced mass; this increases the risk of fracture, which is exacerbated by other aging-related functional reductions. Rapid bone remodelling, as defined by biochemical indicators of bone resorption or creation, appears to enhance bone fragility and fracture risk, according to growing research. [3]

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## Assessing the Health-Related Quality of Life in Patient With Rheumatoid Arthritis: Cross-Sectional Study

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### Abstract:

Rheumatoid arthritis (RA) is a chronic (long-lasting) inflammatory disease that mostly affects joints. RA causes pain, swelling, stiffness, and loss of function in joints. It is an autoimmune disorder because the immune system attacks the healthy joint tissues. Normally, the immune system helps protect the body from infection and disease. This study was conducted with the aim to assess the HRQOL of the patients with Rheumatoid Arthritis. This survey included an interview with the patients and was asked to complete a questionnaire QOL was measured with the help of WHOQOL-BREF. It is a 26-item questionnaire that produces an HRQOL profile. Four domain scores can be derived from it: physical, psychological, social, and environmental. The four domain scores are fashioned in a positive manner that is higher scores denote better QOL. domain score was divided into quintiles for logistic regression. Lowest three quintiles were considered as unsatisfactory QOL and the higher two quintiles were considered as satisfactory QOL among the subjects. The findings of this study clearly indicate the presence of a high proportion of unsatisfactory QOL among the patients with RA. The physical, personal, social, and emotional wellbeing are very much hampered due to the disease progression. Regular follow-up of the patients should be performed to prevent or delay the disability progression. Early identification at primary stage and prompt referral are the key strategies to prevent permanent damage due to the disease. Social security should be made available to those who are abandoned by their families due to the disease. Special vocational training measures should be adopted for the patients with RA who became disabled due to the disease. Keeping in mind the miserable consequences of the disease, management of RA should be included under the program of noncommunicable diseases. Provision of financial support and subsidies for treatment expenditure due to the disease may be explored. Public private partnership model can be used to curtail the expenditure for investigations purpose and provisions of DMARDs. Disease severity and

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# Basics of Sleep

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## ABSTRACT

*Sleep is essential for memory consolidation, energy restoration, and renewal of the body and mind. Sleep impairment can result in behavioural and physiological issues. Sleep is highly susceptible to interruption because of this intricacy. Sleep disruption has a large impact on brain function and can cause a variety of health issues. There are two types and four various stages of sleep. Poor sleep hygiene can have a negative impact on health and interfere with quality of life. Chronic sleep restriction can result in weariness, drowsiness during the day, clumsiness, and weight loss or growth. The circadian rhythm and sleep/wake homeostasis are the two systems that regulate the sleep. The risk of accidents and injuries brought on by exhaustion and sleepiness, such as work-related accidents and car accidents, can be decreased by getting an adequate amount and quality of sleep. To get a good night sleep maintain a consistent sleep routine. The scope of this review is to describe basics of sleep, types- NONREM and REM, stages, history, concepts around sleep, sleep regulation, Benefits of sleep, based on age hours of sleep requirement, sleep deprivation and its consequences, Cause of sleep problems, aging process, lifestyle adjustments and drugs used for good sleep.*

## Introduction:

[1] Sleep is essential for memory consolidation, energy restoration, and renewal of the body and mind. Sleep impairment can result in behavioural and physiological issues [1].

[2] Sleep is a very complicated state that results from interactions between numerous brain areas, neurotransmitter pathways, and hormones—none of which are specifically responsible for producing sleep.

Sleep is highly susceptible to interruption because of this intricacy. Sleep disruption has a large impact on brain function and can cause a variety of health issues.

It is crucial to emphasise that sleep disruption goes far beyond a person's unhappiness with their inability to initiate or maintain sleep, or even just the feeling of being sleepy at an unsuitable time.

- ❖ Poor vigilance
- ❖ Memory loss
- ❖ Slower mental and physical reaction times
- ❖ Decreased motivation
- ❖ Depression
- ❖ Insomnia
- ❖ Metabolic irregularities
- ❖ Obesity
- ❖ Immune system impairment
- ❖ And even a higher risk of cancer are all intimately associated with sleep disruption. [2]

[3] Numerous physiological and behavioural processes essential to health and wellbeing occur during sleep, which is a dynamic and regulated set of states. There are two types of sleep:

- **NREM:** Non-REM sleep for restorative functions, and;
- **REM:** Rapid eye movement sleep for processing memories and dreaming.[3]

[4,5] Various stages of NONREM are:

### Stage 1:

- The transition from wakefulness to sleep occurs during non-REM sleep.
- Heartbeat, respiration, and eye movements slow down during this brief (lasting a few minutes) period of, rather light sleep, and muscles relax with sporadic twitches.





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## A COMPARATIVE STUDY OF KNOWLEDGE, ATTITUDE AND PERCEPTION OF JAUNDICE AMONG PARAMEDICAL AND NON-PARAMEDICAL STUDENTS

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### Keywords:

Jaundice, Knowledge, Attitude, perception, Paramedical students, Non-paramedical students

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**ABSTRACT:** Jaundice is defined as the yellowing of the skin and whites of the eyes which are caused by a buildup of a substance called bilirubin in the blood and tissues in the body. Bilirubin is a yellowish pigment formed by the breakdown of heme, which occurs largely in hemoglobin and red blood cells. The purpose of this study was to analyze and compare the knowledge, attitude, and perception of jaundice among paramedical and non-paramedical students. A Comparative cross-sectional study was conducted in South India for a period of 6 months from May 2021 to October 2021. The Knowledge, Attitude, and perception questionnaire was used to obtain respondents' information. The data collected were tabulated, analyzed, and interpreted using standard statistical tools. The statistical procedure was undertaken with the help of the statistical package InStat and Prism version 6.0. The comparison was done by the Chi-square test. A total of 818 students were selected and divided into two groups such as 409 paramedical students and 409 non-paramedical students. This study concluded that Paramedical students had better knowledge and attitude than non-paramedical students. Many paramedical and non-paramedical students have a positive perception of jaundice, and only a few have a negative perception of jaundice. So, we recommend many awareness programs, seminars, and workshops that need to be conducted for all the students, especially non-paramedical students, to enhance their knowledge and attitude toward jaundice.

**INTRODUCTION:** Jaundice is the yellowing of the skin, sclera, and body fluids<sup>1</sup>. Jaundice is majorly caused by an increase in the amount of bilirubin in the blood. Bilirubin is a yellowish pigment formed by heme breakdown, which occurs largely in hemoglobin and red blood cells<sup>2</sup>. Jaundice is common in developing nations and can be life-threatening<sup>3</sup>. Jaundice is associated with several hepatic diseases, which are still major leading causes of death<sup>4</sup>.

Jaundice is also known as hyperbilirubinemia, which indicates an excessive level of bilirubin that may be in the conjugated or unconjugated form. Jaundice can be caused by the liver being overloaded or damaged, too many red blood cells retiring, and the inability to transfer processed bilirubin from the liver through the biliary tract to the gut<sup>2</sup>.

In India, the incidence of jaundice varies between 0.4 to 0.9/1,000 deliveries<sup>5</sup>. The incidence varies by ethnicity and geography, with East Asians and American Indians having greater rates and Africans having lower rates. The incidence of the disease is higher in those who live at high altitudes. Male infants are more likely to acquire serious neonatal jaundice. The prevalence of neonatal jaundice is 65% of term newborns in the first week develop

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13

**A COMMUNITY BASED COMPARATIVE STUDY OF KNOWLEDGE,  
ATTITUTDE AND PREVENTIVE PRACTICE OF OSTEOPOROSIS -BEFORE  
AND AFTER PHARMACIST COUNSELING**

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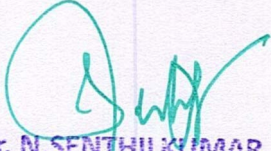
**ABSTRACT**

**Background:** Osteoporosis remains a major public health concern. A good knowledge and awareness of a disease are pre-requisites for success of preventive measures, modifications in life styles and treatment adherence. **Objective:** The current study is to assess the community population's knowledge, attitude, and preventive practices of osteoporosis and to identify the gap in the same in general population before and after providing pharmacist's counselling on osteoporosis. A Comparative cross-sectional study was conducted in South India for a period of 6 months from May 2021 to October 2021. **Method:** The study consisted of a total of 381 participants. The Knowledge, Attitude, and Preventive practice questionnaire was used to obtain respondents information. The data collected were tabulated, analyzed, and interpreted using standard statistical tool, Graph Pad Instat. The P-value less than 0.01 ( $<0.01$ ) was fixed as level of statistical significance. The comparison was done using Chi-square. **Result:** According to the study, the general public's knowledge, attitude, and preventive practices toward osteoporosis have improved since pharmacist counselling when compared to before the counselling was provided. The attitude and preventive practices towards osteoporosis was only fairly increased. However practice in prevention of osteoporosis has to be improved. **Conclusion:** This study concluded that Health authorities should create awareness raising activities and community level counseling for osteoporosis, especially at the primary health care levels and community pharmacies. Improved public awareness and knowledge of osteoporosis would considerably reduce osteoporosis related fracture and overall economic effect of the disease.

**Key words**

Osteoporosis, knowledge, attitude, preventive practice, general population, pharmacist counseling



  
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## Article

# The Design, Synthesis, and Evaluation of Diaminopimelic Acid Derivatives as Potential *dapF* Inhibitors Preventing Lysine Biosynthesis for Antibacterial Activity

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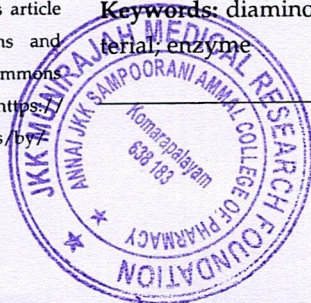
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**Abstract:** We created thiazole and oxazole analogues of diaminopimelic acid (DAP) by replacing its carboxyl groups and substituting sulphur for the central carbon atom. Toxicity, ADME, molecular docking, and in vitro antimicrobial studies of the synthesized compounds were carried out. These compounds displayed significant antibacterial efficacy, with MICs of 70–80 µg/mL against all tested bacteria. Comparative values of the MIC, MBC, and ZOI of the synthesized compound were noticed when compared with ciprofloxacin. At 200 µg/mL, thio-DAP (1) had a ZOI of 22.67 ± 0.58, while ciprofloxacin had a ZOI of 23.67 ± 0.58. To synthesize thio-DAP (1) and oxa-DAP (2), l-cysteine was used as a precursor for the L-stereocenter (l-cysteine), which is recognized by the *dapF* enzyme's active site and selectively binds to the ligand's L-stereocenter. Docking studies of these compounds were carried out using the programme version 11.5 Schrodinger to reveal the hydrophobic and hydrophilic properties of these complexes. The docking scores of compounds one and two were −9.823 and −10.098 kcal/mol, respectively, as compared with LL-DAP (−9.426 kcal/mol.). This suggests that compounds one and two interact more precisely with *dapF* than LL-DAP. Chemicals one and two were synthesized via the SBDD (structure-based drug design) approach and these act as inhibitors of the *dapF* in the lysine pathway of bacterial cell wall synthesis.

**Keywords:** diaminopimelic acid; *dapF* inhibitors; structure-based drug design; heterocyclic; antibacterial; enzyme



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## A NARATIVE REVIEW ON ETIOPATHOGENESIS, CLINICAL MANIFESTATIONS AND MANAGEMENT OF PARAPNEUMONIC EFFUSIONS WITH LITTLE INSIGHT ON ITS DIAGNOSTIC PROCEDURES

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### ABSTRACT:

Essentially 40% of all patients with pneumonia will have a related pleural emanation, albeit a minority will require a mediation for a confounded Para pneumonic emission or emphysema. All patients require clinical administration with anti-infection agents. Emphysema and enormous or loculated emanations should be officially depleted, just as Para pneumonic radiations with a pH <7.20, glucose <13.4 mmol/L (60 mg/dl) or positive microbial stain and/or culture. Seepage is most as often as possible accomplished with tube thoracostomy. The utilization of fibrinolytics stays questionable, despite the fact that proof proposes a job for the early use in confounded, loculated Para pneumonic emissions and emphysema, especially in poor careful competitors and in focuses with insufficient careful offices. Early thoracoscopy is an option in contrast to thrombolytic, in spite of the fact that its job is even less distinct than fibrinolytics. Nearby ability and accessibility are probably going to direct the underlying decision between tube thoracostomy (with or without fibrinolytics) and thoracoscopy. Open careful mediation is in some cases needed to control pleural sepsis or to reestablish chest mechanics. This survey gives an outline of Para pneumonic radiation and emphysema, zeroing in on ongoing turns of events and contentions.

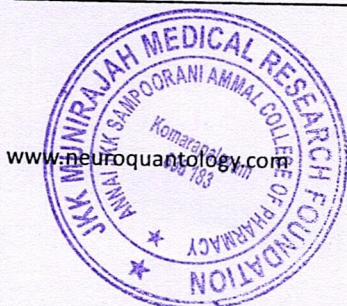
**KEYWORD:** Para pneumonic pleural effusion, Emphysema, Thoracentesis, Third generation cephalosporin, Chest tube drainage.

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15

## Extraction and Investigation of *In-Vitro* Antioxidant and Antimicrobial activity of *Acacia Pennata*

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### ABSTRACT:

Acacia pennata L is a medicinal plant that has been used in traditional medicine for centuries. As microbes become more resistant to antibiotics, phytochemical screening of medicinal plants for antioxidant and antimicrobial activities has become more common. Using the heated continuous percolation (Soxhlet) process, the dried leaves were powdered and extracted with methanol solvent. Many infections can be treated with phytochemicals that have antibacterial properties. The existence of primary, secondary, and secretory metabolites, such as phenolic chemicals, alkaloids, tannins, saponins, anthraquinones, phenols, terpenoids, flavonoid steroids, carbohydrates, oil, and resins, determines a plant's pharmacological efficacy. The antioxidant activity was determined using the DPPH and RPA methods. Bacteria that are Gram Positive Staphylococcus aureus is a kind of bacteria.

Keywords: Extraction, Phytochemical, Antioxidant and Antimicrobial Activity of Acacia Pennata.

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### INTRODUCTION:

A chemical molecule that shields cells from free radical damage. The oxidation of biological molecules is thought to be involved in a wide range of pathogenic events. Reactive oxygen species (ROS) such as OH, HO<sub>2</sub>, O<sub>2</sub><sup>-</sup>, H<sub>2</sub>O, and reactive nitrogen species (RNS) such as NO, NO<sub>2</sub>, ONOO<sup>-</sup> are the most frequent free

radicals known to entail such oxidative damage. (1), and (2) Natural antioxidants have the potential to be multifunctional. The mechanism that is active or dominant in a given setting is determined by the circumstances, but this has an impact on the kinetics and hence the antioxidant activity. Inconsistent results have been recorded

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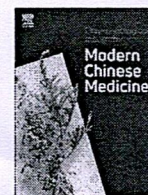
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## Pharmacological Research - Modern Chinese Medicine

journal homepage: [www.elsevier.com/locate/prmcm](http://www.elsevier.com/locate/prmcm)Protective effect of *Ceiba pentandra* (L) Gaertn on CCl<sub>4</sub>-induced oxidative stress and liver damage in rats

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## ARTICLE INFO

## Keywords:

Ceiba pentandra  
Hepatoprotective  
Liver  
Toxicity  
Glycoside  
Tannins

## ABSTRACT

**Background:** *Ceiba pentandra* (L.) Gaertn, popularly known as the white silk-cotton tree and popularly used in Chinese and Indian traditional medicine. The bark is used to treat diarrhea, pain, fever, cardiac problems, asthma, and gastrointestinal problems. The present study aimed to evaluate the hepatoprotective and antioxidant effects of ethanol extract of *C. pentandra* bark (EECP-BK) against CCl<sub>4</sub>-induced hepatic damage in rats.

**Methods:** Preliminary phytochemical analysis was performed to identify the bioactive compounds. CCl<sub>4</sub> (40 mM) induced enzymatic changes at HepG2 cells were adopted for the *in-vitro* model. HepG2 cells were pretreated with EECP-BK (25, 50, 100, and 200 µg/ml) and standard (silymarin 12.5 µg/ml) respectively. Rat model of CCl<sub>4</sub>-induced liver damage for adopted for the *in-vivo* model. Rats were pretreated orally with EECP-BK 200 & 400 mg/kg and standard (silymarin 100 mg/kg) for 7 days. Rats were injected with 1 ml/kg of 50% CCl<sub>4</sub> on day 8 to induce hepatic damage and were observed for antioxidant levels and serum biomarkers. In addition, *in-silico* studies have been performed to explore the binding properties of compounds from EECP-BK with tumor necrosis factor-alpha converting enzyme (TACE) targeting hepatic inflammation

**Results:** The phytochemical analysis confirmed the presence of glycoside, steroids, phenols, tannins, and saponins. EECP-BK 200 µg/ml showed the highest protection against CCl<sub>4</sub> in HepG2 cells. Similarly, silymarin 12.5 µg/ml showed good protection against CCl<sub>4</sub>. In rats, EECP-BK up to 2000 mg/kg did produce any toxic signs or mortality. CCl<sub>4</sub> injection in rats showed elevated liver enzymatic and bilirubin levels and causes liver damage. It also decreased the SOD, CAT, and GSH levels. Pre-treatment with EECP-BK 400 mg/kg showed a significant reduction in SGPT, SGOT, ALP, and total bilirubin levels and increased SOD, CAT, and GSH levels. Similar results were observed with, silymarin treatment also. Furthermore, EECP-BK showed protection over hepatocyte necrosis induced by CCl<sub>4</sub> in rats which is evident by histopathology. Molecular docking studies revealed that acetate 7-rutinoside binds favorably with the active site of TACE with a binding affinity of -8.8 kJ/mol.

**Conclusion:** Our findings supported the antioxidative capability of EECP-BK by showing that it protected the liver from CCl<sub>4</sub>-induced hepatic damage. Additional research is needed to determine its safety profile and to find its molecular mechanism for therapeutic application.

## 1. Introduction

The liver is the primary detoxifying organ removing toxic chemicals and waste from the body by modulating biotransformation. Liver enzymes may be elevated in conditions of the damaged liver [1]. Various toxic substances such as CCl<sub>4</sub>, thioacetamide, some antibiotics,

chemotherapeutic agents, and biological agents such as bacteria and viruses can cause damage to hepatocytes. Long-term exposure to these factors can lead to fibrosis, cirrhosis, and chronic liver disease that occurs in a multi-step process of hepatocellular carcinoma. [2–4]. TNF-α has been studied extensively with the incidence and progression of chemicals-induced liver injury. Its activation leads to regulating various

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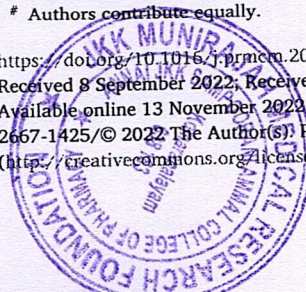
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## Review Article

# Medicinal Plants of *Solanum* Species: The Promising Sources of Phyto-Insecticidal Compounds

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Several medicinal plants have the potential to be a promising alternative pharmacological therapy for a variety of human illnesses. Many insects, including mosquitoes, are important vectors of deadly pathogens and parasites, which in the world's growing human and animal populations can cause serious epidemics and pandemics. Medicinal plants continue to provide a large library of phytochemicals, which can be used to replace chemically synthesized insecticides, and utilization of herbal product-based insecticides is one of the best and safest alternatives for mosquito control. Identifying new effective phyto-derived insecticides is important to counter increasing insect resistance to synthetic compounds and provide a safer environment. *Solanum* genus (Solanaceae family or nightshades) comprises more than 2500 species, which are widely used as food and traditional medicine. All research publications on insecticidal properties of Solanaceae plants and their phytoconstituents against mosquitoes and other insects published up to July 2020 were systematically analyzed through PubMed/MEDLINE, Scopus, EBSCO, Europe PMC, and Google Scholar databases, with focus on species containing active phytoconstituents that are biodegradable and environmentally safe. The current state of knowledge on larvicidal plants of *Solanum* species, type of extracts, target insect species, type of effects, name of inhibiting bioactive compounds, and their lethal doses (LC<sub>50</sub> and LC<sub>90</sub>) were reviewed in this study. These studies provide valuable information about the activity of various species of *Solanum* and their phytochemical diversity, as well as a roadmap for optimizing select compounds for botanical repellents against a variety of vectors that cause debilitating and life-threatening human diseases.

## 1. Introduction

Medicinal plants are traditionally used to treat numerous human infections, and their bioactive compounds have long

been important in therapeutic development, particularly in cancer and infectious diseases. Medicinal plant-derived natural products have garnered much interest in recent years as potential bioactive agents for insect vector control. Vector

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