

PAST RESEARCH EXPERIENCE

❖ 2018- A Study of Catheter Associated Urinary Tract Infections in Critical Care Patients

- **Background:** Catheter associated urinary tract infection is common and potentially preventable complication of hospitalization, especially in critical care patients. Recently there has been change in the causative organisms responsible for UTI in catheterised patients in Critical Care Units (CCUs). This study aims to know the profile of organisms which cause UTI in patients admitted in CCUs of our hospital.
- **Aims & objectives:** To study various etiology, risk factors of UTIs in catheterised patients admitted in CCUs of our hospital.
- **Materials & Methods:** Patients admitted in CCU for more than 72 hours & who are catheterised for more than 2 days to 15 days were included in this study. Urine samples were collected. The samples were processed and isolates were identified as per the standard protocols. Antibiotic sensitivity tests were performed following CLSI guidelines. Fungal isolates were inoculated on SDA. Yeast identification was done by Germ tube test, Cornmeal for morphology and HiMedia Chromagar for further speciation.
- **Statistical Analysis:** A cross sectional study
- **Results:** A total of 20(40%) samples yielded significant growth which was correlated with inflammatory cells on urine microscopy. Among them 13(26%) were Candida sp and 07(14%) were bacterial isolates which includes Klebsiella sp(6%), E coli (2%), Pseudomonas aeruginosa (2%) and Enterococci sp (2%). Multidrug resistance was seen among Pseudomonas aeruginosa (100%). Candida spp include Candida albicans(08%) and Non albicans candida(18%). Non albicans candida includes C. tropicalis (08%), C.krusi(06%) and C.parapsilosis (04%).
- **Discussion and Conclusion:** Emergence of Non albicans candida as a causative organism of catheter associated UTI in critical care patients is increasing. Patients in intensive care, often lack symptoms but are more susceptible for complications due to catheter associated UTIs. Fungal UTI is a neglected part for clinicians. So, care should be taken to treat fungal UTI, to avoid further complications.

❖ 2019- Awareness on hand hygiene: An urgent need

- **Background:** The aim of this study was to know knowledge, attitude and practice of hand hygiene among interns and nurses of MMCRI, Mysuru.
- **Material and Method:** 200 randomly selected health care workers both interns and nurses working in our hospital were selected. Questionnaire published by WHO for assessment of knowledge of hand hygiene was used to analyse the knowledge and another self-made

questionnaire to assess the practice and attitude of hand hygiene was given with proper instructions. A total of 200 responses were collected from interns and nurses & were analysed.

- **Result:** Of 200 study population, 120 were interns and 80 were nurses. The knowledge on hand hygiene was moderate (62%) among the participants. Interns having good knowledge on hand hygiene were 27.5% & nurses having good knowledge were 2.5%. The majority (interns 59.2%; nurses 58.8%) of them had poor attitudes with regard to hand hygiene. Nurses had significantly better hand hygiene practices (43.8%) compared to interns (25%).
- **Conclusion:** Hand hygiene practice is the easy and cheapest way to prevent cross infection for both health care workers and patients. Teaching proper technique of hand washing to health care workers is a basic initiation for infection control and starting refresher courses regarding standard hand hygiene practices for nurses & budding doctors are dire needs which has to be considered as an urgent need.

❖ **2019- Evaluating Rubella Immunity in Women of Reproductive Age in Mysuru: A Cross –Sectional Serosurvey**

- **Introduction:** This study aimed to determine the seroprevalence of rubella IgG antibodies among women of reproductive age in Mysuru, India. Estimating the seroprevalence of rubella immunity level in this population is crucial for informing public health interventions aimed at preventing congenital rubella syndrome (CRS), a severe birth defect that can result by rubella infection during pregnancy.
- **Methods:** A cross-sectional serosurvey was conducted among women of reproductive age (18–38 years) in Mysuru city from January 15, 2019, to December 31, 2019. A total of 311 participants were recruited using a convenience sampling technique. Rubella IgG antibody levels were measured using ELISA with the CALBIOTECH Rubella IgG ELISA kit.
- **Results:** The mean age of the 311 women of reproductive age included in the study was 25.8 ± 5.2 years. Age was not significantly associated with rubella IgG antibody status ($P=0.123$). Overall, 95.5% ($n = 297$) of participants were seropositive for rubella IgG antibodies, indicating immunity against rubella. The lowest seroprevalence (92.1%, $n = 51$) was observed in the 21–25 years age group. While residency was not significantly associated with rubella IgG antibody seropositivity ($P=0.872$), a higher proportion of urban residents (95.68%, $n = 267$) were seropositive. Furthermore, participants with a history of normal pregnancy

(98.59%, n = 166) and those who reported being vaccinated (100%) had a significantly higher seroprevalence of rubella IgG antibodies.

- **Conclusion:** This study found a high prevalence of detectable rubella IgG antibodies (95.5%) among women of reproductive age in Mysuru, suggesting a low risk of rubella infection in this population. This finding is potentially attributable to the successful implementation of the national Measles-Rubella vaccination campaign in India, as evidenced by the high seroprevalence observed self-reported vaccinated participants.

❖ 2020- Waning Immunity to Measles among Children, the Calm before the Storm

- **Introduction:** Measles is a highly communicable disease that results in high morbidity and mortality in children of developing countries but it is vaccine-preventable. To attain vaccination coverage of up to 95% and establish herd protection, the WHO advises administering two doses of the vaccine. This study aimed to know the seroprevalence of protective measles antibody levels among children of age groups less than 10 years.
- **Methods:** The study was conducted in November 2019 and included 90 samples collected at the Department of Microbiology, Mysore medical college and research institute, Mysore. Standardized questionnaire was employed to gather demographic and immunization data. Venous blood samples of 5 ml were obtained from each participant. The CALBIOTECH Measles IgG ELISA kit was utilized to determine the presence of Immunoglobulin G (IgG) antibodies against the Measles virus.
- **Results:** In the study population of 90 participants, the mean age (in years) was 5.4 ± 3.11 . Of the antibody levels, 7 (7.78%) participants had detectable levels of antibody, 65 (72.22%) participants had no detectable levels of antibody and 18 (20.00%) of them had borderline levels of antibody against measles. The difference in the proportion of age groups was found to be insignificant (P-value 0.5034), with the majority of participants, 35 (76.09%) being in >5 years of age group.
- **Conclusion:** The study's results underscore the need for a comprehensive assessment of vaccination coverage and efficacy, particularly in children. Strategies to improve vaccine uptake and address the lack of protective immunity should be prioritized to ensure the health and well-being of the population, with special reference to the most vulnerable groups.