FIRST EPISODE OF PYELONEPHRITIS – TERTIARY CARE EXPERIENCE IN IDENTIFYING RISK FACTORS AND OUTCOMES WITH COURSE OF ANTIBIOTICS

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Introduction

Acute pyelonephritis (APN) is a well-known disease. Earliest citing of the condition dates back to ancient Egypt [1], In spite of this long history, the nomenclature of APN is still controversial, and the semantic ambiguities still cause confusion.

It is essential to identify risk factors and to know the clinical profile of patient with first episode of pyelonephritis for prognosis, thus this study helps in detecting the outcome in such patients after a course of antibiotic treatment.

Methods and Materials

We prospectively collected all patients hospitalized/ Outpatients at our tertiary care hospital from January 2021 to January 2022 with diagnosis of first episode of acute pyelonephritis (PN) aged >18 years.

Acute pyelonephritis was defined as

Clinical syndrome – fever/chills/flank pain/dysuria + pyuria with or without radiological findings suggestive of pyelonephritis with or without positive urine culture Or Renal biopsy showing features of pyelonephritis.

Repeat urine routine and cultures were done at the end of 3 weeks of completion of antibiotics course to detect the microbiological clearance.

Results

- We collected total of 75 cases.
  - Mean age of the patients was 52.68 years. Males outnumbered Females, 41/75 (54.6%) and 34/75 (45.3%), respectively.
  - 65 (86%) were hospitalized and 10 (13.4%) were out-patients.
  - 59 (78%) had complicated urinary tract infection, 9 (12%) had uncomplicated pyelonephritis and 7 (9.3%) had unexplained AKI/RPRF and renal biopsy showed acute pyelonephritis, among them 2 had renal mucormycosis.(figure1)

- Risk factors (figure 2) predisposing to the first episode of acute pyelonephritis.

- Out of 75 patients, 63 (88%) came for follow up,
  - 3 (4%) had mortality by 3 weeks, 2 among them had refractory septic shock.
  - 57 (90%) had less than 3 pus cells in Urine routine, 35 (85%) with negative urine cultures suggesting microbiological clearance
  - 63 (5%) of them received antibiotics for an additional 1 week and achieved microbiological clearance, other 3 (5%) had persistence of pyuria and received long term antibiotics. And on follow up had no further episodes of pyelonephritis. All 3 were diabetics with poor glycemic control. (HbA1C>9.0)

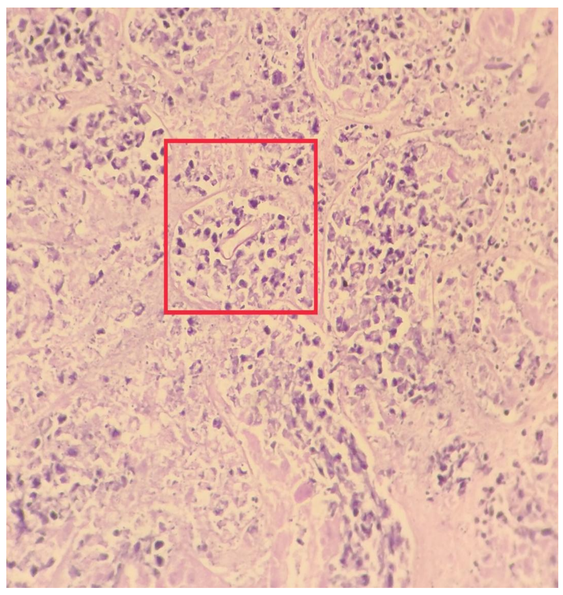

FIGURE 1 : SHOWING EXTENSIVE CORTICAL NECROSIS WITH FUNGAL HYPHAE IN RENAL TISSUE.

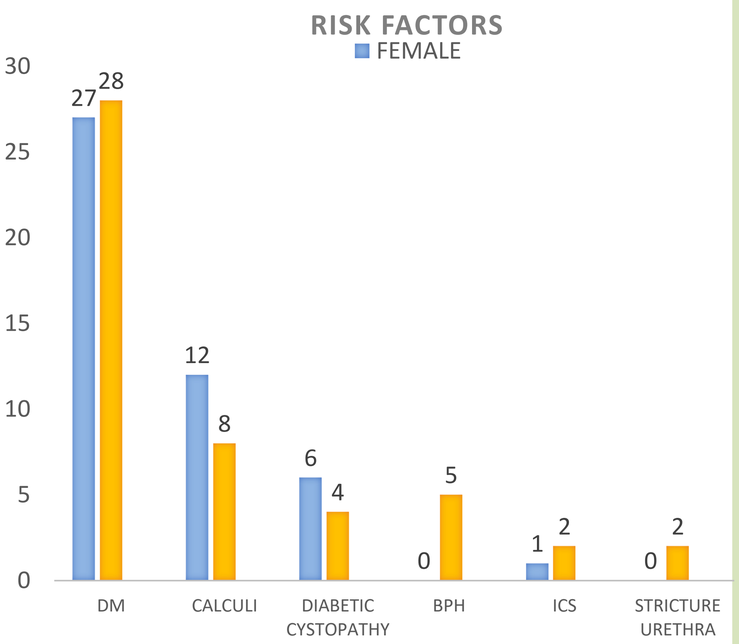

FIGURE 2 : SHOWING RISK FACTORS

CONCLUSIONS

Each episode of UTI adds to the renal damage and progression of CKD. So addressing the risk factors predisposing to the first episode of pyelonephritis is prime importance. As other studies (2- 3), our study also showed poorly controlled DM (70%) is the most important risk factor contributing to pyelonephritis, followed by structural abnormalities of genitourinary tract.

End of antibiotics course cultures and urine routine by 3 weeks showed resolution in 90% of patients whereas 5% received long-term antibiotic therapy, 4% had mortality by 3 weeks

Thus early identification and treatment is prime importance in managing infections. Importance of the microbiological clearance with correction of risk factors in reducing recurrence and reinfection has to be confirmed by other studies.

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