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## A study of renal tuberculosis in Basra, Iraq

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**Background:** Renal tuberculosis is the third most frequent form of extra-pulmonary tuberculosis. About 25% of cases are asymptomatic. It is more common in male and in age group 20-40 years. Urine culture for mycobacteria is the gold standard for the diagnosis.

**Objective:** To use certain clinical criteria that helps in the diagnosis of renal tuberculosis.

**Patients & Methods:** A cross sectional study of patients with recurrent urinary tract infections attends the private clinic, outpatient's clinic and medical ward in Basra Teaching Hospital from the period of September 2009 to September 2012. Certain clinical criteria were used for the diagnosis.

**Results:** Thirty five patients with renal tuberculosis were studied. Seven (20%) patients had evidence of old pulmonary TB. The most common presenting complaint was frequency in 43.3%. Constitutional symptoms were reported in 65.7%. Urolithiasis was reported in 20%. Pyuria was reported in 77.1%, hematuria in 25.7% and sterile pyuria in 82.9% of cases. The tuberculin skin test was positive 74.3%. The intravenous urography (IVU) showed suggestive abnormalities in 82.9%. The urine culture for mycobacteria was positive in only 5.7%. Anemia was reported in 29.4% and 77.1% had high erythrocyte sedimentation rate (ESR).

**Conclusions:** Renal tuberculosis occurred more frequently in females and mainly in patients of 40 to 60 years old. The majority of patients had no previous evidence of tuberculosis. Frequency was the most common presenting complaint. Diagnosis require high index of suspicion in patients with predisposing factors, suggestive urinary symptoms, abnormal urinalysis, sterile pyuria, positive tuberculin skin test, characteristic IVU findings or if accessible CT scan findings.

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## Effect of 4-phenylbutyrate on palmitate induced oxidative stress and renal injury

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Obesity is a significant risk factor for chronic kidney disease. Obesity is shown to increase oxidative stress in the kidney and cause renal injury. Previous studies suggest that 4-phenyl butyric acid (4-PBA) has a protective role against saturated fatty acid induced renal cell death. The primary goal of this project is to evaluate the effect of 4-PBA against palmitate induced oxidative stress and renal injury. NRK-52E cells (a rat renal proximal tubular cell line) were grown to 70% confluency and divided into four treatment groups; control, 250  $\mu$ M palmitic acid (PA), 5 mM 4-PBA and the combination of 250  $\mu$ M PA and 5 mM 4-PBA. After 24 hours treatment period, cells were assessed for oxidative stress by dichlorofluorescein (DCF) staining and for changes in cell viability using the MTT assay. Results had shown that PA treatment markedly increased the DCF fluorescence ( $3.089 \pm 1.87$  fold increase over control) and reduced cell viability ( $83 \pm 6\%$  compared to control) in NRK cells. On the other hand, the combination group showed no alterations in DCF fluorescence ( $1.038 \pm 0.26$  fold change over control) and cell viability ( $96 \pm 2\%$  compared to control). In conclusion, findings of this research suggest that 4-PBA protects NRK cells against PA induced oxidative stress, which was demonstrated by the low DCF fluorescence in the combination group compared to the PA treated group. In addition, 4-PBA also protects NRK cells against PA induced cell death.

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