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Prevalence of diabetes among patients with chronic kidney disease in the Hail Region

Meshari Sultan Alsudayri, Saleh Mofleh Alshammari, Fouad Taiwilaa Alshammari, Jaber Hathloul Alshammri and Abdulhafiz Bashir
University of Hail, KSA

Background: Diabetes is associated with increasing prevalence of chronic kidney disease (CKD) and progression of the disease. Therefore, objective of this study was to estimate the prevalence of diabetes among patients with CKD in Hail, KSA.

Methodology: This is a cross-sectional study carried in the Nephrology Outpatients Clinic in King Khalid Hospital. A total of 200 patients known to have CKD were included in the study.

Results: This study included 98 (49%) Females and 102 (51%) males, The mean age of the females was significantly lower than the males ($P \leq 0.05$), The overall prevalence of diabetes in patients with CKD was 69% among them 73.9% were with retinopathy and diabetes; and female gender were associated with more advanced stage of CKD (p value < 0.05), mean average of eGFR was significantly lower in patients with diabetes ($P \leq 0.05$), eGFR correlates inversely with HbA1c ($P \leq 0.05$), The mean time of onset of CKD in diabetic patients after the diagnosis of diabetes is 11.7 ± 0.67 (p value < 0.05), diabetic females the mean time of onset of CKD after the diagnosis of diabetes is significantly lower than in males (p value < 0.05), Association of diabetes and hypertension in patients with CKD 87.7% were hypertensive among them 72.6% were diabetic ($P \leq 0.05$).

Conclusion: The role of diabetes as a risk factor for CKD and ESRD is higher than it has been estimated in previous studies; females are at higher risk of CKD and eventually end-stage renal disease (ESRD) than males.

mshary-12@hotmail.com

Molecular and culture based assessment of bacterial pathogens in subjects with diabetic foot ulcer

Saba Noor, Jamal Ahmad, Iqbal Parwez and Meher Rizvi
Aligarh Muslim University, India

Diabetic foot ulcerations (DFUs), a dreadful micro-vascular complication is responsible for substantial increase in morbidity and mortality. DFU is a complicated amalgam of neuropathy, peripheral arterial diseases, foot deformities and infection. Spanning the spectrum from superficial cellulitis, microbial flora leads to chronic osteomyelitis and gangrenous extremity requiring surgical interventions and lower limb amputations. Though expeditious and precise discerning of bacterial pathogens is a fundamental grail of clinical diagnostic microbiology, but when conventional methodologies are implemented in identifying bacteria, interpretation of test results requires substantial slanted judgment. Therefore, genotypic detection is budding as substitute to known phenotypic culture based processes. Typically, genotypic identification of bacteria involves the use of conserved sequences within phylogenetically informative genetic targets. Also, time required in conventional diagnosis delays the selection of antibiotic regime making and adversely affects the outcome. Therefore, we reported a comparative evaluation of biochemical and genomic based assays for exploring the common bacterial flora in infected DFU patients along with clinical variables of subjects enrolled. The pathogens selected were (i) *Klebsiella pneumoniae*, ii) *Pseudomonas aeruginosa*, iii) *Escherichia coli* and iv) *Staphylococcus aureus*, stood for the most frequent isolates of diabetic foot infection (DFIs) in previous studies from Northern India. Of 50 specimens obtained from infected DFUs, 74% of cases were affirmative by bacteriological assays and 95% showed positivity via PCR methodologies. Among processed samples 44 isolates were detectable through phenotypic analysis and 73 bacteria by species specific PCR. 13 samples and 19 isolates could not be scrutinized by phenotypic identification systems. The most prevalent pathogens identifiable by both assays were *Klebsiella pneumoniae*, followed by *Staphylococcus aureus*, *Pseudomonas aeruginosa* and *Escherichia coli*. We have shown that PCR based diagnostic methods improved the identification of common aerobic pathogens compared to conventional phenotypic methods. The outcome of this study expresses that polymerase chain reaction provides rapid, unambiguous identification of clinical bacterial isolates. The results highlighted the incorporation of PCR technique in bacterial identification due to shorten turnaround time and may translate into improve clinical outcomes by early use of appropriate antibiotic along with other principles followed in diabetic foot management.

sabanooram@gmail.com