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Association of atrial fibrillation with diabetic nephropathy: A meta-analysis

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Background: Many studies have provided evidence for an increased risk of atrial fibrillation among diabetic patients as compared to the non-diabetic population. It is also well known that diabetes predisposes a person to an increased risk of diabetic nephropathy. A few reviews and studies have hinted towards an increased risk of atrial fibrillation among diabetic nephropathy patients.

Aim: To conduct a meta-analysis to explore if there is an association between diabetic nephropathy and atrial fibrillation.

Methods: The available literature was searched for relevant studies from the period of January 1995 to October 2018. The following quality assessment criterion were considered for study shortlisting: Clearly defined comparison groups, same outcome measured in both comparison groups, known confounders addressed and a sufficiently long and complete (more than 80%) follow-up of patients. Two independent reviewers searched the databases, formed their search strategies and finalized the studies. Data was analyzed to obtain a summary odds ratio along with a forest plot by Cochrane's RevMan 5.3.

Results: Only four studies were found to meet the inclusion criterion for this meta-analysis (total number of study participants: 307330, diabetic nephropathy patients: 22855). Of these, two were retrospective cross-sectional studies, one was a prospective cohort study and one was a case control study. Three studies had provided the odds ratio as the measure of effect (two retrospective cross-sectional studies and one case control study), with the one cohort study reporting the hazards ratio as the measure of effect. Therefore, the meta-analysis was done excluding the cohort study. The summary odds ratio in the present study was 1.32 (0.80-2.18), which was not statistically significant. Due to large heterogeneity among the included studies and their small sample sizes, it was found that the summary estimate shifted towards the null value.

Conclusion: The present meta-analysis found no significant association between atrial fibrillation and diabetic nephropathy. However more studies with large sample sizes are required to strengthen the evidence for an association.

Biography

Maha Mohammed Arnous has completed his MD degree from School of Medicine in King Fahad Medical City in Riyadh, Saudi Arabia. She is the Senior Resident of Community and Family Medicine at Security Forced Hospital. She is very active in clinical research of diabetes care and prevention.

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