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Stroke related bacteriuria: A case-control study of stroke patients attending a physiotherapy clinic in Ghana

Eric S Donkor

University of Ghana Medical School, Ghana

Background: The relationship between community-acquired bacteriuria and stroke has not been adequate, though infections are known to be a major complication of stroke patients. In this study, we evaluate the risk of community-acquired bacteriuria among stroke patients, the associated factors and the causative organisms.

Methods: This was a cross-sectional study involving 70 stroke patients and 83 age and sex matched apparently healthy controls. Urine specimens were collected from all the study subjects and analysed by standard microbiological methods. Demographic and clinical information were also collected from the study subjects. For stroke patients, the information collected also included stroke parameters such as stroke duration, frequency and subtype. Statistical analyses were performed on the inter-relationships among the study variables and also to identify predictors of stroke related bacteriuria.

Results: The mean age of the stroke patients and the control group were 55.6 ± 10.3 and 53.8 ± 10.6 years respectively. Bacteriuria was significantly higher among stroke patients (24.3%, n=17) than among the control group (7.2%, n=6) with a relative risk of 3.46. Among the control group, all the 6 bacteriuria cases were asymptomatic, whereas the 17 stroke bacteriuria cases comprised 15 cases of asymptomatic bacteriuria and 2 cases of symptomatic bacteriuria. In the univariate analysis, females stroke patients were associated with higher risk of bacteriuria ($p=0.003$) while stroke patients whose marital status were "single" were less likely to have bacteriuria ($p<0.01$). Multivariate analysis however, did not identify any predictors of bacteriuria among stroke patients. The etiology of bacteriuria was similar in both study groups and coagulase-negative staphylococci were the most predominant organisms isolated from stroke patients (12.9%) and the control group (2.4%).

Conclusion: Stroke patients have a significantly higher risk of community-acquired bacteriuria which in most cases is asymptomatic. Community-acquired bacteriuria in stroke patients appears to have little or no relationship with demographic and stroke related features of stroke patients such as stroke duration and subtype.