

Soni C., Rawat H.K.

**ASSESSMENT OF RENAL FUNCTION IN PATIENTS WITH
ATRIAL FIBRILLATION IN CONTEXT OF HYPERURICEMIA**

Tutor: PhD, associate professor Lemiasheuskaya S.S.

*Department of Internal Medicine, Gastroenterology and Nutrition with Training and Advanced
Training Courses
Belarusian State Medical University, Minsk*

Abstract. Hyperuricemia often found associated with atrial fibrillation is now identified as a comorbidity in patients with atrial fibrillation (AF). Elevated serum uric acid has been associated with atrial remodelling and increased AF risk. The coexistence of gout and AF complicates since both conditions share common risk factors such as hypertension, obesity, and renal disorders, raising the risk of thromboembolic events and cardiovascular morbidity. Understanding and managing gout in AF patients is important for overall cardiovascular risk reduction.

Goal: to examine renal function of patients with atrial fibrillation with co-existing gout and hyperuricemia.

Materials and methods. A total of 200 medical case histories were reviewed from Cardiology Department of EV Kloumov 3rd City Hospital, Minsk. Cases were reviewed to investigate patients diagnosed with persistent atrial fibrillation (AF) and paroxysmal atrial fibrillation corrected by amiodarone in seven days. Twenty-eight cases meeting the inclusion criteria were identified. These cases were divided into three groups: Group 1 had on isolated atrial fibrillation (n=15), Group 2 had atrial fibrillation with hyperuricemia (n=9) and Group 3 had atrial fibrillation with gout (n=4). Variables analysed included demographic data (age, weight, height), BMI, renal function (GFR, creatinine), inflammatory markers C-reactive protein (CRP), uric acid and comparisons were performed.

Results and their discussion. 15 patients with AF (mean body mass index (BMI)= 32.46 ± 5.99), 9 patients with AF with hyperuricemia (mean BMI= 31.19 ± 2.89 kg/m²), 4 patients with AF and gout (mean BMI= 36.75 ± 3.38 kg/m²),

When we compared GFR in these we found weak differences in Group1 [50.4(46.00, 56.00) ml/min] and Group2 [51.50 (46.00; 56.00) ml/min] whereas a statistically significant differences ($p=0.04$) were found in comparisons done in GFR levels of the groups with isolated AF [51.50 (46.00; 56.00) ml/min], with the group with AF and Gout [26.50 (19.00; 34.00) ml/min]; CRP levels on day 2 between groups with AF and gout [5.15 (4.37, 5.75) mg/ml] and AF with hyperuricemia [26.89 (23.60, 42.50) mg/ml] ($p=0.03$); CRP levels on day 2 between groups of isolated AF [18.7(3.10, 20.4) mg/ml] and AF with hyperuricemia [26.89 (23.60, 42.50) mg/ml] ($p=0.04$); between BMI of groups with AF and gout [36.15(34.32, 39.17)] and AF with hyperuricemia [31.63(29.05, 32.9)] ($p=0.01$)

Conclusions. The study highlights that patients with atrial fibrillation (AF), particularly those with coexisting gout had reduced renal function and since these patients demonstrated higher BMI values which reflected excessive obesity compared to those with isolated AF indicating compromised renal function, which may further contribute to renal impairment and increased cardiovascular risk emphasizing the importance of monitoring kidney function and managing metabolic factors in AF patients, especially those with gout. These findings highlight the need for further research with large sample size for preventive strategies.