УДК [61+615.1] (043.2)
ББК 5+52.81
А 43
ISBN 978-985-21-1864-4

Ahamed Faleel A.F, Noorul Haq F.N.

ASSESSMENT OF ACUTE KIDNEY INJURY AS COMPLICATION OF SEVERE COVID-19 IN PATIENTS WITH DIABETES

Tutor: PhD, associate professor Dydyshka Yu.V.
Department of Endocrinology
Belarusian State Medical University, Minsk

Introduction. The emergence of COVID-19 has resulted in respiratory symptoms, ranging from mild to severe, with an incidence of approximately 777,518,388 as per latest reports in March 2025. Individuals infected with COVID-19 develop complications - affecting various systems – that require ICU (Intensive Care Unit) admissions, and may even result in death. One of the main complications of COVID-19 is the occurrence of Acute Kidney Injury (AKI). It has an incidence of about 8.9%, studies show that the risk of developing AKI increases with Diabetes as a concomitant disease.

Aim: of this research is to study the relationship between Diabetes and the risk of developing AKI in COVID-19 infected patients in the ICU.

Materials and methods. This was a cross-sectional study; the sample size was 295 patients with the mean age 62.89 ± 13.80 years; 40.7% females (n=120) and 59.3 (n=175) male. The glucose levels monitored for six days in the ICU, the Creatinine levels recorded to monitor the kidney function. We have divided the patients into 2 main groups – patients with pre-existing kidney patholgies, and patients with no known kidney pathologies, and they subdivided into Males and Females. The normal creatinine levels for males ranges between 53-106 µmol/L, whereas in females it's between 44 to 97 µmol/ (min 5.16 µmol/l; max 807 µmol/l).

Results and their discussion. 18.64% (n=56) had pre-existing kidney pathology, and the Glucose data of two patients hadn't been recorded, leaving us with 54 patients, 44% (n=24) females and 55.6 (n=30) males. And 54.71% (n=29) were with Diabetes (11 females and 18 males). 72.72% (n=8) female with pre-existing kidney pathology and diabetes patients had elevated creatinine. 53.85% (n=7) of remaining 13 female non-diabetic patients had raised creatinine levels. Similarly, 61.11% (11 out of 18) male diabetic patients with kidney disease had increased creatinine levels, and 50% (6 out of 12) non-diabetic males had the same. 52 male patients out of 141 had no known kidney pathology, but were with diabetes, 44.23% (23 out of 52) had elevated creatinine levels. 35.95% (n=32) of 89 non-diabetic patients had raised creatinine levels. Whereas in female patients, 39.32% were with diabetes (35 out of 89) and 48.57% (n=17) had elevated creatinine levels. According to KDIGO classification, 45% (129 out of 285 patients) of all patients had developed AKI. In accordance to severity, 77 out of the 129 were classed as Stage1 AKI, 32 Stage2 and 20 for Stage3. Out of the 129 patients AKI of varying severity, 48.83% (n=63) with diabetes. From the remaining 156 patients without AKI, 39.10% (n=61) had hyperglycaemia.

Conclusion. In case of severe COVID-19, for diabetes patients are more prone developing AKI, than non-diabetic patients. According to the study, diabetes puts females at a higher risk of developing AKI than males. Additionally, in patients with pre-existing kidney diseases, diabetes females were at a higher risk of developing AKI than diabetic males (72.72% vs. 61.11%, χ^2=0.41, p=0.694). The patients with no prior kidney diseases follow a similar trend, putting diabetic patients at a higher risk of developing AKI than the non-diabetic ones. There were more diabetes females, who developed AKI than males even in patients with no prior kidney diseases (48.57% vs. 44.23%, χ^2=0.33, p=0.598).