INTERNATIONAL SUMMIT ON DIABETES, ENDOCRINOLOGY, AND METABOLIC DISORDERS

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The use of angiotensin-converting enzyme inhibitors in hospitalized patients with COVID-19 is associated with a lower risk of mortality

Abstract:

The effect of renin-angiotensin-aldosterone system (RAAS) inhibitors in combination with COVID- 19 and diabetes mellitus (DM) remains controversial. We assessed the risk of death in COVID-19 inpatients based on the presence or absence of DM, arterial hypertension (AH) and the use of RAAS inhibitors in two centers. Center 1: the results of treatment of all adult PCR-confirmed COVID-19 inpatients in 2021, n = 1097, are presented. The presence of DM at the time of admission and the category of antihypertensive drugs during hospital stay were noted. Leaving the hospital due to recovery or death was considered as a treatment outcome. Multivariable logistic regression analysis was used to assess the risk of death. Patients with COVID-19 without AH were considered the reference group. DM was known in 150 of 1,097 patients with COVID-19 (13.7%). Mortality among DM inpatients was higher: 20.0% vs. 12.4% respectively (p=0.014). We found a reduction in the risk of death for COVID-19 inpatients without DM, who received RAAS inhibitors compared with the corresponding risk of normotensive inpatients, who did not receive antihypertensives: OR 0.22 (95% CI 0.07–0.72) adjusted for age, gender and glycemia.

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Center 2: the relationship between the use of angiotensin-converting enzyme inhibitors (ACEIs) and angiotensin II receptor blockers (ARBs), DM history and the risk of death in patients with COVID-19 was assessed in 2021: the records of 153 COVID-19 inpatients admitted in 2021 were reviewed. In DM patients (n=28) mortality was 53.6% vs. 12.8% without DM (n=125), $p < 0.001$. After adjusting for age, minimal O2 saturation and treatment the DM-associated OR was 8.25 (1.92–35.42). The ACEIs-associated OR was 0.10 (0.02–0.69). The use of ACEIs in the treatment of COVID-19 inpatients is associated with a lower risk of mortality compared to those not using hypotensive treatment, regardless of the presence of DM.

Keywords: angiotensin-converting enzyme inhibitors, angiotensin II receptor blockers (ARBs), COVID-19, hospital treatment, diabetes mellitus, mortality

Biography

Resident Institute Endocrinology & Metabolism, Kiev, Ukraine, 1980—1985, physician (Endocrinology) since 1983, researcher, 1985—1991, diabetes mellitus epidemiology laboratory, since 2004; professor assistant Donetsk National Medical University, 1991—2004; clinical consultant University Clinic, 1991—2004; Associate Professor (1999), Doctor of Medical Sciences (2009), full Professor (2021), professor (2020 – now) Department of Endocrinology Shupyk National Healthcare University of Ukraine. Member of Ukrainian association of endocrinologists, European Association for the Study and Primary Care Diabetes Europe www.pcdeurope.org, European Diabetes Epidemiology Group (EDEG), SigmaXi member (since 2024).

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