ANALYSIS OF FACTORS RELATED TO THE CLINICAL COURSE OF COVID-19 INFECTION IN PATIENTS WITH HYPERTENSION


OBJECTIVES

The identification of the angiotensin converting enzyme (ACE2) as a target of SARS-CoV2 virus, raises questions about a possible change in the clinical course of this infection associated with renin-angiotensin-aldosterone system (RAAS) inhibitors treatment.

Purpose: characterize the clinical evolution in hypertensive patients admitted for COVID-19 infection and to determine if treatment with RAAS inhibitors, age and additional comorbidities may affect the prognosis.

METHODS

- Single-center, observational and retrospective study.
- Inclusion criteria: hospital admission for COVID-19 infection between 01/03/2020-24/03/2020
- Collected variables: demographic, clinical and analytical. End of follow up: 10/10/2020
- Clinical course was evaluated by: development of acute respiratory distress syndrome (ARDS), bilateral pneumonia, length of stay and mortality.
- Statistical analysis:
  - To evaluate the possible influence of factors on evolution -> Binary logistic regression (STATA-IC14®)
  - Transformation of quantitative dependent variables into dichotomous.
  - Statistical significance: p<0.05

RESULTS

Factors linked to mortality:
- Additional cardiovascular diseases (OR=2,10; p<0,001)
- Age (OR=1,05; p<0,001)

Factors linked to prolonged length of stay*
- Chronic kidney disease (OR=1,73; p=0,043)
- Age (OR=1,02; p=0,022)
  *Duration >14 days

Factors linked to bilateral pneumonia development:
- Obesity (OR=6,31%; p<0,001)

Factors linked to ARDS development:
- Diabetes (OR=1,84; p=0,001)
- Obesity (OR=1,77; p=0,013)

General data:
571 hypertensive patients

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<tr>
<th>RAAS inhibitor treatment: 398 (69,7%)</th>
<th>No RAAS inhibitor treatment: 173 (31,3%)</th>
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<td>Median age: 76 years (IQR: 66-83), 59,2% males.</td>
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<td>7,2% smokers and 80,0% had additional comorbidities</td>
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<td>At hospital admission: 27,3% presented serious hypoxemia (SatO2&lt;90%), 64,3% lymphopenia (&lt;1000/mm3), 18,8% CRP&gt; 20 mg/L and 11,6% D-dimer &gt;1200 ng/mL.</td>
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<td>Clinical outcomes: 91,9% required oxygen therapy, 76,4% bilateral pneumonia, 47,5% ARDS and 33,6% died during admission.</td>
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<td>Median hospital stay: 15 days (9-24)</td>
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Use of RAAS inhibitors was not related to changes in analytical parameters at admissions or clinical course.

CONCLUSIONS

- Antihypertensive treatment with RAAS inhibitors does not seem to be linked to risk of worse evolution in COVID-19 infection.
- Old age and additional cardiovascular disease appear to be associated with increased mortality in hypertensive patients.