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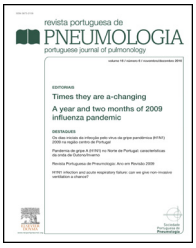

LETTERS TO THE EDITOR

Prognostic value of plasma D-dimer level in adults with community-acquired pneumonia: A prospective study

Community-acquired pneumonia (CAP) is associated with considerably high morbidity and mortality rates particularly in older patients.[1,2] Despite advances in antibiotic treatment, prompt diagnosis and treatment are crucial for better outcomes. The accuracy of pneumonia severity scores, namely CURB-65 and pneumonia severity index (PSI) is debateable, and can lead to underestimates of the severity of the disease, leading to inadequate stratification.[3] This explains the increased interest in new biomarkers with better prognostic value and accuracy. One of these new, potentially helpful biomarkers, which has not yet been fully validated, is plasma level of D-dimer (DD). The relationship between DD and CAP is still unclear and has only been evaluated by a limited number of studies, the majority of which have displayed it as a marker of prognosis and treatment response.

In order to enhance our knowledge about this matter, we conducted a prospective analysis in adult patients with CAP, admitted to our Internal Medicine ward between December 2013 and April 2014.

CAP was defined as a recent chest radiography opacity consistent with acute lung infection associated with typical respiratory symptoms, such as fever and pleuritic pain, and a lack of an alternative diagnosis. The diagnosis was confirmed by the authors in every single case through clinical reports and chest radiography reviews.

Our study aimed to investigate the correlation between DD levels and the severity of CAP, assessed by CURB-65 and PSI scores, radiological extent of the disease and in-hospital mortality. In addition to these variables, we performed a standard evaluation that included past medical history, severity risk factors and laboratory findings, specifically DD, at hospital admission. Data analysis was executed by SPSS.

A total of 102 patients (65 men and 37 women) were involved. There were no significant age differences between the two groups (mean age 81.57 ± 10.57 years versus 78.59 ± 12.65 years, respectively). DD showed an asymmetric distribution with a median (range) of 1.55 μg/ml, (0.17 μg/ml -14.69 μg/ml). DD was negative (< 0.60 μg/ml) in 20% of the patients. Differences of DD levels, PSI and CURB-65 score concerning age ranges were also taken into consideration. All the patients were divided into 4 age ranges (>30-64; 65-74; 75-84; > 85 years) and there were no meaningful differences between these groups. There was also no meaningful statistical difference in DD levels related to gender.

Patients were assigned into two different radiographic pattern groups: unilobar and multilobar pneumonia. Although the median DD in the multilobar group was higher (2.06 μg/ml versus 1.23 μg/ml), as reported by others studies, such as Levi et al. [4] and Ribelles et al.,[5] no correlation between DD and the extent of the disease was found.

DD increases had some degree of correlation with the CURB-65 score increases ($p < 0.008$) which is consistent with previous findings, as published by Snijders et al.[6] In fact, the addition of D-dimer has slightly increased the performance of CURB-65, concerning the severity of CAP. On the other hand, no correlation was found with PSI score, which contradicts results from other studies, such as Ribelles et al.[5]

The relationship between DD and mortality was also assessed. The area under the curve (AUC) of the receiver operating characteristic (ROC) was used to calculate the mortality predictive value. DD and PSI score showed a low mortality predictive value but, on the other hand, CURB 65 and addition of DD levels to CURB 65 had a substantial positive predictive value (Fig. 1).

Several authors have addressed the relationship between DD and clinical outcomes. Ribelles et al. [5] found a strong correlation between mortality rates and DD in CAP, while Kollef et al. [7] demonstrated that increased DD were associated with worse clinical outcomes. This was not confirmed by our study, since we did not find a significant correlation between DD levels of patients who died and those who showed overall improvement.

In conclusion, in our study, DD did not exhibit prognostic value in adult patients with CAP, despite multiple comorbidities, and also did not correlate with the severity of the disease, radiological extent and in-hospital mortality rates.

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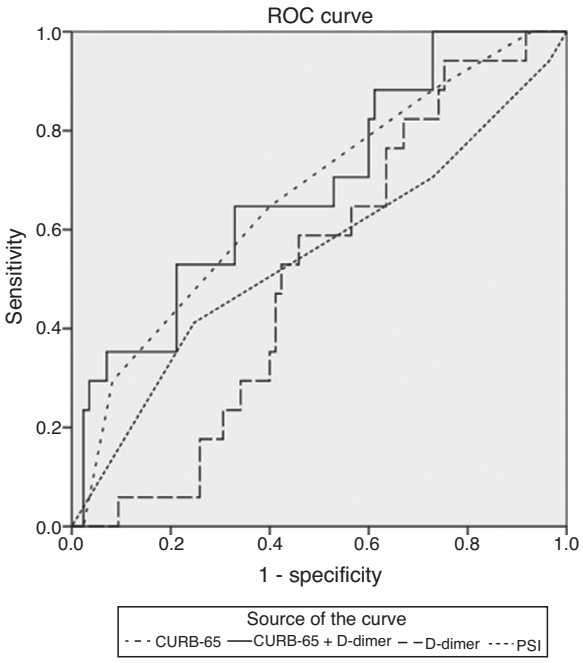

Figure 1 Receiver operating characteristic curves for CURB-65 (dotted spaced line: AUC, 0,669; 95%CI, 0,53 to 0,81), CURB-65 and D-dimer levels (continue line: AUC: 0,689; 95%CI, 0,55 to 0,83), d-dimer level (dashed line: AUC, 0,513; 95% CI, 0,39 to 0,64) and for PSI (dotted line: AUC 0,548; 95% CI 0,38 to 0,71).

Disclosure

Absence of financial support and off-label or investigational use.

Absence of any conflict of interest for all of the authors.

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Lung transplant: Complications and quality of life

To the Editor,

The aim of lung transplant (LT) is not only to extend the survival rate of recipients but also to improve their quality of life (QoL).[1] Several studies have been conducted to compare QoL before and after LT.[2–4] However, fewer reports evaluated the long term QoL, specifically the period when some late complications tend to appear.[5] These include chronic allograft rejection or bronchiolitis obliterans syndrome (BOS), which are the major cause for decreased patient life expectancy.[5] In order to prevent or stabilize these complications, LT recipients maintain a high level of immunosuppressants for life. In turn, the immunosuppressive drugs induce different disorders, like arterial hypertension, chronic kidney failure, diabetes, hyperlipidemia, osteoporosis, and infections (which are the second cause of mortality after BOS), and increase the risk of malignancies, mainly skin cancers, post-transplant lymphoproliferative disorders and Kaposi's sarcoma.[6]

The authors here describe the data about complications related to LT and QoL of patients followed in LT outpatient clinic of Centro Hospitalar São João. Of the 83 patients, 37 (30 LT recipients and 7 LT candidates) completed the Medical Outcomes Study Short Form-36 (MOS SF-36), the London Chest Activity of Daily Living (LCADL) questionnaire and the Hospital Anxiety and Depression Scale (HADS). The lung transplant recipients ($n = 30$) were grouped according