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Title: Influence of comorbidities on pneumococcal community-acquired pneumonia

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Body: Background: The burden of pneumococcal pneumonia remains high in Spain despite preventive and therapeutic measures. In order to assess the population risk groups, we investigated host-related risk factors (comorbidities, etc.) and outcomes of pneumococcal community-acquired pneumonia (CAP). Methods: We compared confirmed pneumococcal pneumonia (CPP, positive culture of pleural fluid or lung samples [bronchial aspirate, BAL]), possible pneumococcal pneumonia (PPP: urinary Ag or sputum culture) and non-pneumococcal pneumonia (NPP: other aetiologies). Results: we analysed 2172 CAP(1996-2012) with known aetiology: 457(21%)CPP, 678(31%)PPP and 1037(48%)NPP. CPP showed lower rates of elderly people(>74yrs, CPP:30%, PPP:36%, NPP:36%;p<0.04) and polysaccharide pneumococcal vaccination (CPP:11%, PPP:16%, NPP:19%;p<0.01) but more hepatic disease (CPP:10%, PPP:9%, NPP:7%;p=0.04), HIV (CPP:12%, PPP:9%, NPP:5%;p<0.01). No differences were found for other comorbidities (cardiac,etc), tobacco and alcohol. CPP presented with increased severity and poorer outcomes.

	CPP	PPP	NPP	p-value
PSI IV-V (%)	76	71	37	<0.01
Pulmonary complications, (%)	34	14	19	<0.01
Extrapulmonary complications, (%)	34	22	22	<0.01
ICU admission (%)	30	15	18	<0.01
Time to clinical stability, days	7.7	5.4	5.4	<0.01
Length of stay, median days	9	7	7	<0.05
1-month Mortality, (%)	13.6	5.3	9.7	<0.01

The multivariate analysis for 30d-mortality showed the following risk factors: neurological disease(OR:2.7), pulmonary complications(OR:10). Conclusions: pneumococcal CAP is still a major cause of mortality particularly in adults with comorbidities regardless of age. The conjugate pneumococcal vaccination could be a good strategy to decrease morbidity and mortality from CAP.