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Title: Clinical features of patients with pneumococcal urinary antigen positivity, in a cohort of hospitalised community acquired pneumonia

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Body: Streptococcus pneumoniae accounts for up to 50% of hospitalised community acquired pneumonia. Diagnosis of pneumococcal disease has always been a challenge. Urinary antigen testing provides a non-invasive, sensitive and specific diagnostic tool. We investigated the clinical features of patients with pneumococcal urinary antigen positivity in patients admitted with community acquired pneumonia. We conducted an observational, prospective cohort study in two large UK teaching hospitals, from September 2008 to September 2010. Consecutive adult patients (aged over 16), admitted with community acquired pneumonia (CAP) were recruited. A standardised proforma was used to collect clinical information. Urine samples were tested using the Binax NOW® immunochromatographic test. A total of 920 urine samples were available for analysis. 205 (22.3%) had a positive antigen test. Patients with a positive antigen test were more likely to be hypotensive (16.8% of antigen positive vs. 6.8% of antigen negative patients, OR 2.8, 95% CI 1.7-4.8, p<0.05) and tachypnoeic at presentation. Incidence of parapneumonic effusion and critical care admission rates (OR 2.22, 95%CI 1.49-3.34, p<0.01) were also higher in the antigen positive group. These associations were maintained when adjusted for age and pneumonia severity. Patients with a positive pneumococcal antigen test were more unwell at presentation with a greater likelihood of complications. This is likely to be due to the higher bacterial load in patients with a positive antigen test. Thus, urinary antigen testing appears to add prognostic value in addition to its diagnostic capabilities, when used in pneumococcal disease.