

Current Characteristics and Outcome of *Streptococcus pneumoniae* Endocarditis in the XXI Century: A Review of 188 Cases (2001-13)

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Background:

Streptococcus pneumoniae is a severe but infrequent cause of infectious endocarditis (IE). We describe current epidemiology, clinical and microbiological characteristics, and outcomes in a series of *S. pneumoniae* IE (SPIE) diagnosed in Spain and in cases published since 2001 in the literature.

Methods:

From January 2004 to December 2008, we prospectively collected all cases of IE at our hospital (n=228). Since 2008, we also collected all cases of IE diagnosed in a multicentre cohort (27 Spanish hospitals until 2013; n=2539). We performed a systematic review of the literature (2001-2013). All the cases with complete clinical data were collected using a pre-established protocol. Prognostic factors of mortality were analyzed using logistic regression.

Results:

We collected 188 cases SPIE: 5/228 (2.19%) from our hospital, 19/2539 (0.75%) patients from the Spanish study, and 164 cases from the review. Mean age was 39 y, 32 patients (17%) were ≤18 y, and 70.1% of patients were male. SPIE was community-acquired in 97.4%. The main underlying conditions were alcoholism (23.5%), immunosuppression (19.8%), previous liver disease (11.1%), and IVDU (9.6%). Valve disease was recorded in 11.2%. SPIE affected a native valve in 93.6%, and the most frequently involved valve was the aortic valve (51%) followed by the mitral valve (37.8%). Blood culture provided a microbiological diagnosis in 89.9%. Penicillin resistance was detected in 16% (n=84). Valve vegetations were present in 150 cases (79.8%). The main clinical manifestations included fever (79.8%), new heart

murmur (61.2%), embolism (42%), pneumonia (42%), meningitis (36.7%), and Austrian syndrome (17.5%). Cardiac surgery was performed in 47.9% of patients. In-hospital mortality was 25.5%. Multivariate analysis showed only meningitis to be associated with mortality (OR 2.9; 95% CI, 1.1-7.7; $p=0.02$), while valve surgery was protective (OR 0.2; 95% CI, 0.1-0.7; $p=0.01$).

Conclusion:

SPIE is a community-acquired disease, affecting mainly native aortic valves. Half of the cases had concomitant pneumonia and one-third developed meningitis. Mortality was high, mainly in patients with CNS involvement. Surgery was protective.