Risk of pneumonia in adult patients with atrial septal defect.

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Objectives:
According to medical textbooks pneumonia is common for patients with atrial septal defect (ASD). The pathogenesis and incidence are, however not well characterized and it is not known whether ASD closure protects against pneumonias. In this nationwide cohort study we describe the incidence of pneumonia in patients and compare it with the background population. The patients investigated are those with an open ASD, those having the ASD closed interventionally or surgically, and those where the ASD has been judged insignificant and has been left untreated.

Methods:
All patients registered in Denmark between 1977 and 2009 with an ASD were included. Follow up ended December 2011. Patients aged below 18 years at present, patients with other congenital heart disease except PDA and those only diagnosed once before the age of one year were excluded. For every patient in the cohort 10 persons from the Danish Civil Registration were matched on gender and year of birth. Data from the Danish National Patient Registry and the Danish Registry for Congenital Heart Disease were used. All hospital contacts with pneumonia (bacterial, viral, abscesses or empyema) were identified.

Results
2391 patients of whom 789 had their ASD closed (421 by surgery and 368 by catheter) were included. Pneumonia was seen at least once in 463 (19%) of the patients with ASD (Closed ASD N=135 (17%), not closed ASD N= 328 (20%)). Nine percent of the patients with ASD had more than one pneumonia with a total of 1008 pneumonias (Closed ASD N=189 before closure, N=96 after closure). In the general population comparison cohort 2176 persons (9%) had pneumonia at least once with a total of 4063 pneumonias (3,5% had more than one pneumonia). Comparison of prevalence per year before and after ASD closure and comparison the general population cohort is still pending as well as time-to-event analysis.

Conclusion
We have found that the proportion of ASD patients with pneumonia is increased compared with the general population. We will at the time of presentation have further data on the impact of ASD closure on incidence of pneumonia.