Respiratory infections

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The increasing incidence of aspergillosis in Poland

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Introduction. Aspergillus is the most prevalent airborne fungal pathogen in developed countries, and in immunocompromised patients causes a usually fatal invasive aspergillosis (IA). Understanding the pathobiology of this fungal species requires not only analysis of the putative fungal virulence factors that stimulate fungal growth and/or survival in the lung environment, but also knowledge of the factors related to epidemiology of this disease. Although the incidence of IA has increased in last years, information about IA epidemiology in Poland may be helpful in comparative analysis of this disease in the European countries.

Objectives: This study measured the incidence of IA, and assessed the gender distribution and territorial differences in the occurrences of BD in Poland over a six-year period. To the best of our knowledge, this is the first evaluation of this rare disease in Poland based on a hospital morbidity database.

Methods: The authors conducted a retrospective, population-based study, using hospital discharge records. IA incidence was estimated based on data from a Polish hospital morbidity study, carried out by the National Institute of Public Health. Data included 2752 hospitalization records of 1885 patients.

Results: The study analysis included 2752 hospitalizations. Significant differences in sex (1809 male vs 943 female, $P<0.001$) and place of residence (1734 pts from urban regions vs 1018 pts from rural regions, $P<0.001$) were observed in this study. Median and mean age were 51 and 49 years, respectively. The average annual incidence rate of AI was estimated at 11.9 per million (95% CI: 9.5 – 14.4). Significant increase in IA incidence was observed during the study period (10 per million in 2009 vs 15.4 per million in 2014, $P<0.001$). During the study period 85 male and 126 female patients died while hospitalized. Patients in the study group were mainly hospitalized on departments: pulmonology (24%), tuberculosis and lung diseases (17%), hematology (10%), chest surgery (9.9%), and hematologic on children (5%).

Conclusions: The incidence of AI in Poland was estimated at 11.9 per million per year, with significant predominance of male patients and predominance of patients from urban regions. Hospital discharge records may be useful and important elements of epidemiological studies on IA. Further research into the epidemiology of infectious disease in Poland is needed as a significant increase trend in IA incidence was observed in this study.