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Paper Poster Session
Emerging and pre-emerging viruses

Management of hospitalized patients in the season 2015 with high influenza activity

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Background: Because of a high infectivity with a basic reproductive rate between 2 and 6, rapid identification of influenza cases in a hospital setting is important for clinical management and transmission control. In the present study, we investigated the clinical characteristics of influenza from the season 2015. In addition, the effect of a strict hygiene management consisting of a bundle of measures for transmission control and prevention on the rate of nosocomial influenza cases was evaluated.

Material/methods: Patients with respiratory symptoms hospitalized during January and March 2015 were enrolled in this observational study. Each patient was tested by a rapid assay using polymerase chain reaction (PCR) for detection of for influenza A and B. Additionally, patients were clinically examined by a standard protocol for characteristics according to the case definition for influenza: fever, cough, headache, muscle aches, pneumonia and acute respiratory distress syndrome (ARDS). Patients with a positive influenza test were managed in line with the national hygiene guidelines including the following bundle: strict isolation of patients or cohorting, hand hygiene / using gloves / use of surgical masks in case of direct contact to patients. However, because of the increasing rate of influenza patients during the observational period, hygiene management was enforced in a way that hospital staff was provided to use surgical masks from the beginning until the end of each working day. Effectiveness of measures was evaluated by monitoring the rate of nosocomial influenza infections based on criteria of the Centers for Disease Control (CDC).

Results: A total of 235 patients (mean of age: 77 years) with a positive PCR-result for influenza A / B were eligible. Distribution of influenza-A strains was 8% for pandemic H1N1, 82% for seasonal H1N1 / H3N2 and 10% for influenza B. With regard to clinical characteristics of influenza A, only the frequency of cough was increased when compared to the PCR-negative group with respiratory symptoms (48 % vs. 23 %, $p < 0.01$). Body temperature, frequency of headache, malaise and pneumonia did not differ between both groups. During the observational period, 47 patients acquired influenza by nosocomial transmission. However, the ratio of nosocomial infections per community acquired influenza decreased from 0.48 to 0.19 after introducing the use of surgical masks for the whole staff from the beginning until the end of each working day.

Conclusions: During the influenza season 2015, effective discrimination of influenza from other respiratory infections in elderly hospitalized patients for effective transmission control and prevention of nosocomial cases was only possible by a combination of clinical signs and rapid laboratory testing. Furthermore, the general use of surgical masks by hospital staffs seem increased effectiveness for prevention of nosocomial infections in this season with a high influenza burden.