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Paper Poster Session

Influenza - clinical epidemiology

Factors associated with severity in adults hospitalized for influenza infection in France: a three-year multicentric prospective study.

Paul Loubet¹, Pierre Loulergue^{*2}, Nezha Lenzi³, Florence Galtier⁴, Philippe Vanhems⁵, Xavier Duval⁶, Stephane Jouneau⁷, Déborah Postil⁸, Bruno Lina⁹, Fabrice Carrat¹⁰, Odile Launay¹¹

¹*Hopital Cochin Cic 1417, Paris, France*

²*Hopital Cochin, Paris, France*

³*I-Reivac Hopital Cochin, Paris, France*

⁴*Cic Chu Montpellier, Montpellier, France*

⁵*Lyon 1 University & Edouard Herriot Hospital, Hcl, Lyon, France*

⁶*Cic Chu Bichat, Paris, France*

⁷*Cic Chu Rennes, Rennes, France*

⁸*Cic Chu Limoges, Limoges, France*

⁹*Hospices Civils de Lyon, Institut des Agents Infectieux (Iai) de Lyon - Centre de Biologie Et de Pathologie Nord, Laboratoire de Virologie, Lyon Cedex 04, France*

¹⁰*Institut Pierre Louis D'epidemiologie Et Sante Publique, Paris, France*

¹¹*Hôpitaux Universitaires Paris Centre, Paris, France*

Background: Seasonal influenza epidemics result in excess hospital admissions. The objective of the study was to investigate the factors associated with severe outcomes in adult patients hospitalized with laboratory confirmed seasonal influenza.

Material/methods: Influenza cases were selected from a multicenter, prospective, hospital-based study carried out during three consecutive influenza seasons from 2012 to 2015 in France. Influenza was confirmed by reverse transcription PCR. Sociodemographics and clinical variables were compared according to influenza types and subtypes. Factors associated with complications occurrence, Intensive Care Unit (ICU) admission and death were analyzed using a backward stepwise logistic regression adjusted on "age", "sex", "influenza season", "time from onset of symptoms to admission" and "chronic respiratory disease" as appropriate.

Results: Overall, 566 cases had proven influenza, median age was 67 years (IQR, 51-81) and 296 (52%) were men. Chronic underlying diseases concerned 462 (82%) patients, mostly chronic respiratory diseases. Influenza A concerned 422 (75%) cases with 163 (39%) being H1N1 subtype, 239 (57%) H3N2 and 21 (4%) non-identifiable samples. Influenza B concerned 144 (25%) cases with respectively 115 (80%), 9 (6%) and 20 (14%) of Yamagata, Victoria and non-identifiable subtypes. Patients with type A influenza were more likely to present with chronic respiratory diseases (44% vs.

31%, $p=0.01$), dyspnea (72% vs. 59%, $p=0.007$) and suddenness of symptoms (56% vs. 41%, $p=0.003$). Patients with H3N2 subtypes were significantly older (73, IQR 58-83 vs. 60 IQR 47-74, $p=0.001$), more commonly affected by chronic respiratory diseases (45% vs. 34%, $p=0.02$) and diabetes (30% vs. 18%, $p=0.01$), more likely to present with dyspnea (78% vs. 67%, $p=0.02$) and more likely to have ARDS complication (15% vs. 8%, $p=0.02$). Vaccination uptake was 38%, although, according to French guidelines, 472 patients (88%) had an indication for influenza vaccination. Median time from onset of symptoms to hospitalization was 2 days (IQR, 1-3). Overall, 255 (45%) patients had complications; mainly pneumonia (143, 30%) and respiratory failure (116, 20%), 83 (15%) were admitted to ICU and 21 (4%) died during hospitalization. Sixty-six patients (12%) received oseltamivir treatment, of whom 75% had a chronic condition. Oseltamivir was initiated less than 48h following the onset of symptom in 88% of cases. Age older than 65 years was the only factor associated with the occurrence of complication. Absence of vaccination, absence of oseltamivir use before admission, presence of a chronic respiratory disease and active smoking were associated with ICU admission. Age older than 65 years and ICU admission were associated with mortality.

Conclusions: Severe influenza affects preferably older patients and those with underlying conditions. Vaccination and early oseltamivir administration both recommended in this population appear to reduce admission to ICU.