

POSTER PRESENTATION

Open Access

Pneumococcal pneumonia coinfection in critically ill patients with influenza a (h1n1) primary viral pneumonia

FJ González De Molina^{1*}, A Rodríguez², S Barbadillo³, E Díaz⁴, J Solé-Violán⁵, L Socias⁶, JC Vergara⁷, R Zaragoza⁸, B Suberviola⁹, L Vidaur¹⁰, R Ferrer¹¹, I Martín-Loeches¹², SEMICYUC/GETGAG Working Group

From ESICM LIVES 2015

Berlin, Germany. 3-7 October 2015

Introduction

It has been generally believed that influenza virus infection increase susceptibility to invasive pneumococcal pneumonia. However, information regarding the impact of *S. pneumoniae* respiratory coinfection (SpCoI) in patients affected with A(H1N1) primary viral pneumonia is scarce.

Objectives

Our aim was to analyse the demographic and clinical differences between patients admitted to ICU due to A (H1N1) pneumonia with and without SpCoI.

Methods

Prospective, observational, multicenter study conducted in 148 Spanish ICUs. Individuals with A(H1N1) confirmed using RT-PCR during the 2009 to 2014 influenza seasons were included and compared with those patients with SpCoI. Patients' demographic, clinical, radiologic features, laboratory values, ICU and hospital length of stay (LOS) and outcomes were recorded. Discrete variables are expressed as counts (percentage) and continuous variables as medians with 25th to 75th interquartile range (IQR). Differences between groups were assessed using the χ^2 test and the Fisher exact test for categorical variables and Mann-Whitney U test for continuous variables.

Results

Of 2343 patients with confirmed A(H1N1) pneumonia, 208 were excluded due to respiratory coinfection by non-pneumococcal microorganism. At all, 1949 patients with A(H1N1) pneumonia were compared to 186 patients

with documented SpCoI (incidence= 8.7%). Patients SpCoI presented a higher APACHE II score (14 [10-19] vs 17 [12-21.5], $P = 0.001$) and SOFA score (5 [3-8] vs 6 [4-9], $P = 0.002$). Patient with SpCoI were less obese (36.8% vs 22.2%, $P < 0.001$). HIV presented SpCoI more frequently (2.0% vs 4.3%, $P = 0.036$). No other differences in comorbidities were observed. Patients who had coinfection developed acute kidney injury more frequently (22.8% vs 32.4%, $P = 0.004$) but no difference in renal replacement therapy was observed (10.8% vs 11.5%, $P = 0.773$). Shock requiring vasopressors were more frequently in those patients with SpCoI (49.7% vs 61.1%, $P = 0.003$). No differences were observed in invasive mechanical ventilation (68.8% vs 65.0%, $P = 0.211$), prone positioning (18% vs 15.1%, $P = 0.331$) or LOS. Coinfection was not associated with increased ICU mortality (19.5% vs 21.0%, $P = 0.627$).

Conclusions

Incidence of SpCoI among Influenza virus infection admitted to ICU was low. There was no difference in LOS or mortality for patients with SpCoI despite their greater severity and organ dysfunction at ICU admission.

Authors' details

¹Mutua Terrassa University Hospital, Terrassa, Spain. ²Hospital Universitari de Tarragona Joan XXIII, Tarragona, Spain. ³Hospital General de Catalunya, Sant Cugat del Valles, Spain. ⁴ParcTaulí Hospital, Sabadell, Spain. ⁵Hospital Dr. Negrín, Las Palmas de Gran Canaria, Spain. ⁶Hospital Son Llatzer, Mallorca, Spain. ⁷Hospital de Cruces, Vizcaya, Spain. ⁸Hospital Dr. Peset, Valencia, Spain. ⁹Hospital Universitario de Santander, Santander, Spain. ¹⁰Hospital de Donostia, San Sebastián, Spain. ¹¹Mútua Terrassa University Hospital, Intensive Care, Terrassa, Spain. ¹²St James's University Hospital, Dublin, Ireland.

¹Mutua Terrassa University Hospital, Terrassa, Spain
Full list of author information is available at the end of the article

Published: 1 October 2015

References

1. Hament JM, Kimpen JL, Fleer A, Wolfs TF: **Respiratory viral infection predisposing for bacterial disease: a concise review.** *FEMS Immunol Med Microbiol* 1999, **26**:189-95.
2. Martín-Loeches I, Sanchez-Corral A, Diaz E, Granada RM, Zaragoza R, Villavicencio C, Albaya A, Cerdá E, Catalán RM, Luque P, Paredes A, Navarrete I, Rello J, Rodríguez A, H1N1 SEMICYUC Working Group: **Community-acquired respiratory co-infection (CARC) in critically ill patients infected with pandemic 2009 influenza A (H1N1) virus infection.** *Chest* 2011, **139**:555-562.

doi:10.1186/2197-425X-3-S1-A829

Cite this article as: González De Molina *et al.*: Pneumococcal pneumonia coinfection in critically ill patients with influenza a (h1n1) primary viral pneumonia. *Intensive Care Medicine Experimental* 2015 **3**(Suppl 1):A829.

Submit your manuscript to a SpringerOpen[®] journal and benefit from:

- Convenient online submission
- Rigorous peer review
- Immediate publication on acceptance
- Open access: articles freely available online
- High visibility within the field
- Retaining the copyright to your article

Submit your next manuscript at ► springeropen.com
