

Session: P070 Update on respiratory viruses

Category: 1c. Influenza and respiratory viruses

24 April 2017, 13:30 - 14:30
P1400

Impact of molecular virus detection on the antimicrobial management of hospitalized adult patients with severe acute respiratory infection

Marc Bourgeois¹, Nathalie Ausselet¹, Véronique Gérard², Louis De Canniere², Isabelle Michaux³, Youri Glupczynski⁴, Pierre Bogaerts⁴, Te-Din Huang⁴, Bénédicte Delaere^{*1}

¹*Chu Ucl Namur (Université Catholique de Louvain); Site Godinne; Infectious Diseases*

²*Chu Ucl Namur (Université Catholique de Louvain); Site Godinne; Emergency Dpt*

³*Chu Ucl Namur (Université Catholique de Louvain); Site Godinne; Intensive Care Dpt*

⁴*Chu Ucl Namur; Site Godinne; Laboratory of Microbiology*

Background: Respiratory viruses are known to be responsible for hospitalization of a significant proportion of adult patients presenting with severe acute respiratory infections (SARI) during winter months. While influenza is considered as a public health surveillance priority, the burden of other respiratory viruses can still be underestimated.

As part of the sentinel network of Belgian hospitals for the surveillance of severe influenza infections, we have performed a yearly prospective registration of our SARI adult hospitalizations since 2009. The 2015-2016 Belgian influenza season was of moderate intensity.

We aimed to assess the impact of our laboratory routine workflow for Influenza and RSV detection on the antimicrobial prescribing behavior.

Material/methods: The surveillance period started when the consultation rate for acute respiratory infections increased in the paediatric population (RSV viruses circulation, assessed by the Belgian sentinel general practitioners network). Adult SARI patients were enrolled at the Emergency Department (ED) according to a standard case definition (fever, cough and/or dyspnea, hospitalization required), and sampled (nasopharyngeal swabs) for in-house Influenza/RSV detection (RT-PCR). Molecular analysis was performed daily (working days), with a maximum Turnaround-Time (TAT) of 72 hours.

A more extended viral molecular workout was carried out at the Belgian National Influenza Center (NIC), with retrospective results available for a panel of other respiratory viruses.

Clinical and epidemiological data were prospectively recorded, and computerized pharmacy orders for prescription of antimicrobial agents retrospectively reviewed for SARI patients that turned out to be positive for a viral respiratory infection.

Results: From November 25th/2015 to April 30th/2016, 155 adult SARI patients were enrolled. Overall, 55 (35%) turned out to be positive for at least one respiratory virus (in-house and NIC laboratory data).

An early diagnosis (within 72h from admission) for Influenza or RSV was available in 41 patients (33 Influenza, 8 RSV), 5 showing evidence of a bacterial respiratory co-infection. The antimicrobial treatment was adapted in 19 (53%) out of 36 patients with a single viral infection documented (withheld n=13; interrupted n=6).

Fourteen additional patients had a viral infection documented at NIC after discharge (3 Influenza, 11 other respiratory viruses). Eight (80%) out of the 10 patients without evidence of a bacterial respiratory infection received a full course of antimicrobial treatment.

Conclusions: Empirical antimicrobial treatment is part of the management of adults hospitalized for acute respiratory conditions in winter months, and the laboratory diagnosis of viral respiratory pathogens is unfortunately not yet considered as standard practice in acute care settings.

A systematic molecular virus detection process can have a dramatic impact on the prescribing behavior, mainly regarding the withholding of antimicrobial treatment.

We hypothesize that such process allows medical practitioners to opt for an antibiotic-free window pending the virological result, according to patient status and severity criteria at admission.