



EDITORIAL

Return of the flu: leadership, teamwork and foresight[☆]

El retorno de la gripe: liderazgo, trabajo en equipo y anticipación

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Leadership, teamwork and foresight are three characteristic values of Intensive Care Medicine. By applying these principles, intensivists were able to offer an unprecedented response to the threat posed by the influenza A H1N1 (2009) epidemic, with its organizational, media and scientific implications. An example of this response is reflected by the production of over 20 publications^{1–24} showing the benefits of early treatment with oseltamivir in order to lower the viral load and abort the innate and adaptive host immune response^{2,17} that causes collateral damage in the form of acute lung injury (ALI). Thanks to such scientific collaboration on the part of investigators of the Infectious Diseases Working Group of the Spanish Society of Intensive and Critical Care Medicine and Coronary Units (*Grupo de Trabajo en Enfermedades Infecciosas de la Sociedad Española de Medicina Intensiva, Crítica y Unidades Coronarias*, GTEI-SEMICYUC), we know that concrete populations such as pregnant women, obese individuals, immune depressed or asthmatic subjects, as well as healthy children and young adults, can avoid complications through the adequate and immediate use of oseltamivir.¹⁹

With the lack of an effective vaccine, pregnant women, young patients often with comorbidities, obese individuals, asthmatics or immune depressed subjects were admitted in 2009 with refractory hypoxemia and rapidly progressing lung condensations (primary viral pneumonias) or without lung opacities (bronchospasm), of an intensity not seen before in

Spanish Intensive Care Units. The mortality rate among these patients in Spain was over 25%,¹⁹ though without reaching the lethality levels recorded in Latin America.⁷

The autumn of 2010 brought a new flu wave, as expected, and in the month of December the ICUs were again filled with patients presenting severe respiratory failure and acute respiratory distress syndrome (ARDS). This number of *Medicina Intensiva* publishes a description of the first 300 cases of the 2010–2011 epidemic reported to the GTEI registry.²⁵ The study has important limitations, since there are no children; no systematic analysis is made of the presence of other respiratory viruses; the case distribution by centers is not clear; and no comparisons are made with a control group (i.e., with the episodes recorded in the same centers in 2009). It is therefore difficult to establish comparisons, and data interpretation or generalization is consequently limited.

There are three notorious areas with room for improvement: (a) the important representation of risk groups without vaccination; (b) delay in the start of oseltamivir even in risk groups – particularly pregnant women; and (c) the non-justified use of corticosteroids in pneumonia, despite the demonstration¹⁶ that these drugs increase overinfection and mortality. This suggests that informative campaigns are needed, targeted to the general population and to healthcare professionals – including areas such as general practice or primary care, or midwives – led by intensivists who can explain our experience in the ICU and the solid scientific evidence indicating that such deaths and costly admissions to Intensive Care are avoidable.

The first post-pandemic studies of the seasonal presentation²⁶ corresponding to 2010 confirm that primary viral pneumonia due to influenza A H1N1 (2009) has again become the most frequent flu presentation in the ICU – and everything suggests that it will remain so in

[☆] Please cite this article as: Rello J, Balcells J. El retorno de la gripe: liderazgo, trabajo en equipo y anticipación. *Med Intensiva*. 2011;35:460–2.

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the coming years. In contrast to 2009, it presented later, coexisting with some cases of influenza B, as well as with frequent coinfections caused by bacteria or other viruses. Presentation in the form of bronchospasm/severe bronchiolitis with normal X-ray findings has also been documented.

In Vall d'Hebron Hospital (Barcelona), the flu peaked in 2010 and shifted from October to late December, and among children, the disease affected infants under two years of age to a greater extent. The comparison of 52 ICU admissions corresponding to the two years²⁶ reveals a comparable percentage of ARDS, though the proportion of patients with a SOFA score > 5, APACHE II > 10 or PaO₂/FiO₂ < 100 was higher in 2010 – thus reflecting that the patients were in a comparatively more serious condition. Coinfections in turn underwent a 4-fold increase in 2010 (reaching 39.1%), with pneumococcus predominating in adults and respiratory syncytial virus in pediatric cases (42%). Despite the increased seriousness of presentation of the disease, the mortality rate (31% in intubated patients) did not increase significantly, and the mean stay in the ICU decreased by 5 days. This may have been a consequence of the experience gained in our hospital, as reflected by suppression of corticosteroid use in pneumonia; the early and prolonged use of antiviral drugs; the optimization of ventilation, incorporating high-flow oxygen therapy (Optiflow®) in initial patient management,²⁷ and resorting to high-frequency oscillatory ventilation (HFOV) in the more serious cases.

The existing evidence and the experience gained in these two years point to the need to systematically discard possible influenza viruses and other respiratory viruses through molecular biological techniques in patients admitted to the ICU with respiratory failure, in view of the possibility of administering antiviral drugs capable of lessening the viral load and improving patient prognosis. On the other hand, conventional oxygen therapy should be replaced by devices capable of supplying high oxygen flows (up to 50 l/min) with optimum warming and moisture (Optiflow®). Lastly, in order to avoid deaths and admissions to the ICU, vaccination should be increased in risk groups, with the early use of oseltamivir, as is done in other infectious diseases.

Concern about improving our capacity to respond to a next pandemic and to other healthcare emergencies should lead us to develop an ICU network in both adults and children, following the example of the United Kingdom, with real-time intercommunication of the Units in order to offer an immediate response to potential healthcare emergency situations.

Conflict of interest

Dr. Rello has been coordinator of the European Registry of Severe Cases of Influenza A, financed with 45,000 euros in OnMedic by the *European Society of Intensive Care Medicine*, and has represented Spain by delegation of the MSPSI in the teleconferences of the WHO and the ECDC on flu. Dr. Rello is the Head of group 18 of the CIBERES. He has been a non-profit advisor on influenza for the WHO, MSPSI and *Departament de Salut de la Generalitat de Catalunya*.

Neither Dr. Rello nor his relatives have received any type of specific remuneration for flu on the part of the CIBERES,

the drug industry, scientific societies, or the public administration.

As a pediatric intensivist, Dr. Balcells has represented Spain in the teleconferences of the WHO and the ECDC. Neither Dr. Balcells nor his relatives have received any type of specific remuneration for flu on the part of the drug industry, scientific societies, public administration or the CIBERES.

Acknowledgements

Dr. Rello wishes to thank the opportunity for learning and the continued collaboration of the members of the GTEI-SEMICYUC; the effort and dedication of the professionals of the research team; and the confidence of Ildefonso Hernández and his team of the *Dirección General de Salud Pública* of the MSPSI.

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