Influenza: the old enemy is back – and renewed

Influenza: o velho inimigo está de volta – e renovado

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The continent is Europe, and the year is1918, the outbreak of World War I. A silent enemy is killing more than the shooting and the bombshells. Millions of people were falling victims of an initially simple disease, with symptoms of fever, body pain, malaise, coryza and cough. Flu? Yes, the flu that in a few months would cross frontiers and oceans, affecting the whole planet and killing between 30 and 100 million people. A pandemic that reached a large part of the population at that time and that was suppressed from the news through the press censorship by the nations at war, but not in Spain, a neutral nation during the war, and one of countries with the largest number of victims.

The Spanish flu, as it became known, ended in 1919, but not its causal agent: the H1N1 virus which continued existing and undergoing mutations, originating other viral strains, such as the H2N2 (Asian flu, 1957), the H3N2 (Hong Kong flu, 1968) and the H5N1 (Bird flu, 1997 and 2003). In April of 2009, the Mexican Secretary of Health notified an outbreak of a respiratory disease caused by a swine origin virus, known as influenza A (H1N1)[1]. The old villain was back. In the same month, the World Health Organization classified the disease and a pandemic of worldwide proportions. As forecasted, the disease spread out globally with approximately 400,000 described cases and almost 5,000 deaths reported.

Although the diagnosis is eminently clinical and based on laboratory tests, imaging methods have frequently been used in the evaluation of patients with suspected H1N1 infection. Chest radiographs are normal in more than half of the patients, or demonstrate pulmonary opacities with an acinar pattern, generally central and located in the lower lobes, sometimes assuming a diffuse pattern[2,3]. Computed tomography (CT) is much more effective in the evaluation of findings, consisting of sparse opacities with ground-glass attenuation, usually peribronchovascular or subpleural, sometimes in association with consolidation foci, resembling the findings of acute respiratory distress syndrome or respiratory bronchiolitis with organizing pneumonia/cryptogenic organizing pneumonia[2–4]. On the other hand, findings such as opacities with a tree-in-bud pattern, centrilobular nodules and mosaic pattern of attenuation (crazy paving), commonly found in viral pneumonias, are not frequently observed in the infection by H1N1. Some studies report a greater predisposition to the development of pulmonary thromboembolism in infected patients[2].

Brazil, one of the most populous countries of the world was one of the most affected by the disease, particularly in the Southern and Southeastern regions, during the winter

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months[5], and some local case reports on the imaging findings of the H1N1 infection, are about to be published in international literature[6,7]. One of the first original articles reporting imaging findings in the H1N1 infection, developed simultaneously with the international ones, described the study of Marchiori et al.[8] that evaluated 20 patients with the disease by means of plain radiography and high resolution CT, with the main findings being ground-glass opacities and predominantly subpleural, bilateral consolidations.

The article of Verrastro et al.[9] published in the present issue of **Radiologia Brasileira** confirms the findings of previous studies, demonstrating predominance of ground-glass opacities and consolidations in nine patients. Considering that the sample of this study included hospital inpatients, five of them were at a high risk for the development of severe disease presentations (a pregnant patient and four renal transplant recipients) and also were those who presented more extensive tomographic findings. Additionally, amongst the renal transplant recipients, one presented as the main tomographic finding, centrilobular nodules with a tree-in-bud pattern, an uncommon finding in H1N1 infections, but already described in cases of influenza pneumonia in immunocompromised patients[10]. In this same group, the authors observed pleural effusion and mediastinal lymph nodes enlargement, findings that also are not frequent in viral infections in immunocompetent patients.

Infection rates are decreasing in Brazil as the temperatures in the Southern hemisphere increase, with the current levels below the baseline and few cases of pandemic influenza. However, with the proximity of winter in the Northern hemisphere, the disease rates are escalating in North America, Western Europe, and Northern Asia. In a more and more globalized world, with shorter and shorter distances, the knowledge on clinical and imaging findings of H1N1 infection plays a paramount role in the fight against the disease. After all, almost 100 years after the Spanish flu epidemic, we do not want to see a repetition of the tragedy.

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