

Revista de la Asociación Mexicana de  
**Medicina Crítica y Terapia Intensiva**

Volumen  
Volume **17**

Número  
Number **2**

Marzo-Abril  
March-April **2003**

*Artículo:*

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## Is SARS a global health hazard?

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In mid November 2002 the World Health Organization (WHO) had received reports from China of highly contagious and severe atypical pneumonia of unknown cause, and since mid February WHO has been working to confirm reports of this outbreak in Viet Nam, Hong Kong and continental China).<sup>1-3</sup> On February 28, 2003 Dr. Carlo Urbani, an expert of communicable diseases of WHO, was the first to identify the outbreak of this new disease in an American businessman who had been admitted to a hospital in Hanoi.<sup>4-7</sup> On March 15, 2003 WHO named this mysterious form of pneumonia *Severe Acute Respiratory Syndrome* (SARS).<sup>4-7</sup> SARS is believed to have originated in Foshan (in the southern province of Guangdong, China) last fall and appeared prevalent among medical personnel, physicians, nurses, hospital workers, ambulance personnel, students and their household members.<sup>4-7</sup> SARS is an emerging viral infectious contagious disease; fever followed by rapidly progressive respiratory compromise are the symptoms and signs from which the syndrome derives its name; it may progress and often results in Acute Respiratory Distress Syndrome (ARDS).<sup>4-7</sup> SARS has spread throughout the world because people can be exposed in one place and be half a world away a day later when they become symptomatic.<sup>7</sup> The collaboration of countries and laboratories was facilitated the successful identification of a new pathogen, a member of the coronavirus family (named by WHO "SARS virus") never before seen in humans and the rapid sequencing of its genome.<sup>4</sup>

On May 1 case definitions for surveillance of SARS were revised:<sup>8</sup>

**Clinicians are advised that patients should not have their case definition category downgraded while awaiting results of laboratory testing or on the basis of negative results.** See *Use of laboratory methods for SARS diagnosis*.

### SUSPECT CASE

1. A person presenting after 1 November 2002<sup>1</sup> with history of:
  - high fever (> 38 °C)
 AND
  - Cough or breathing difficulty
 AND one or more of the following exposures during the 10 days prior to onset of symptoms:
  - **close contact**<sup>2</sup> with a person who is suspect or probable case of SARS;
  - history of travel, to an area with recent local transmission of SARS
  - residing in an area with recent local transmission of SARS
2. A person with an unexplained acute respiratory illness resulting in death after 1 November 2002,<sup>1</sup> but on whom no autopsy has been performed
 AND one or more of the following exposures during 10 days prior to onset of symptoms:
  - **close contact**<sup>2</sup> with a person who is a suspect a probable case of SARS;
  - history of travel to an area with recent local transmission of SARS

<sup>1</sup> The surveillance period begins on 1 November 2002 to capture cases of atypical pneumonia in China now recognized as SARS. International transmission of SARS was first reported in March 2003 for cases with onset in February 2003.

<sup>2</sup> Close contact: having cared for, lived with, or had direct contact with respiratory secretions or body fluids of a suspect or probable case of SARS.

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- residing in an *area with recent local transmission for SARS*

#### PROBABLE CASE

1. A suspect case with radiographic evidence of infiltrates consistent with pneumonia or respiratory distress syndrome (RDS) on chest X-ray (CXR),
2. A suspect case of SARS that is positive for SARS coronavirus by one or more assays. *Use of laboratory methods for SARS diagnosis*
3. A suspect case with autopsy findings consisting with the pathology of RDS without an identifiable cause.

#### EXCLUSION CRITERIA

A case should be excluded if an alternative diagnosis can fully explain their illness.

#### RECLASSIFICATION OF CASES

As SARS is currently a diagnosis of exclusion, the status of a reported case may change over time. A patient should always be managed as clinically appropriate, regardless of their status.

- A case initially classified as suspect or probable, for whom an alternative diagnosis can fully explain the illness, should be discarded after carefully considering the possibility of co-infection.
- A suspect case who, after investigation, fulfils the probable case definition should be reclassified as “probable”.
- A suspect case with a normal CXR should be treated, as deemed appropriate, and monitoring for 7 days. Those cases in whom recovery is inadequate should be re-evaluated by CXR.
- Those suspect cases in whom recovery is adequate but whose illness cannot be explained by an alternative diagnosis should remain as “suspect”.
- A suspect case who dies, on whom no autopsy is conducted, should remain classified as “suspect”. However, if this case is identified as being part of a chain transmission of SARS, the case should be reclassified as “probable”.
- If an autopsy is conducted and no pathological evidence or RDS is found, the case should be “discarded”.

SARS has rapidly spread worldwide. But: Is this illness a global health hazard for humans?

The opinions are controversial. The number of new cases continues to increase, particularly in China; as of today 6,234 cases and 435 deaths have been reported from 27 countries in five continents; the mortality rate increased from less of three per cent to fast seven per cent; and according with professor Roy Anderson, an expert of infectious diseases, it might be about 10 per cent.<sup>4,9</sup> In addition, some experts say SARS could have a similar impact to the 1918 flu epidemic that killed 50 million – or the current world HIV crisis.<sup>10,11</sup> Others believe that the illness, should it become established in countries with poor health systems, could kill millions worldwide. Scientists say, at the moment, this disease is relatively hard to control.<sup>10</sup> Item: SARS has a great potential for rapid international spread under the favourable conditions created by highly mobile, closely interconnected world; the proportion of patients requiring intensive care and the increase of cases of young people, previously healthy, are alarming. There are warnings from scientists that the virus may outwit all efforts to contain it, because this strain is relatively new to humans and genetic mutations which improve its ability to survive in our cells are possible.<sup>10</sup> Of course, should SARS continue to spread, the global economics consequences, could be great.<sup>4</sup>

In the other hand, WHO believe that in many countries, including Hong Kong, the worst may already be over.<sup>10</sup> For example, Viet Nam, one of several countries affected by local transmission of SARS, was able to contain the outbreak. This country has effectively worked in partnership with other governments and organizations and have conscientiously implemented detection and protection measures including: a) Prompt identification of persons with SARS, their movements and contacts. b) Effective isolation of SARS patients in hospital. c) Appropriate protection of medical staff treating these patients. d) Comprehensive identification and isolation of suspected SARS cases. e) Exit screening of international travelers. f) Timely and accurate reporting and sharing of information with other authorities and/or governments.<sup>11</sup> Professor Peter Harvey who recently visited Hong Kong and China says: “In my view, we are not going to get a global pandemic of SARS”. “I believe that it will behave as bit like Lassa Fever – with outbreaks every now and again that kill people. But Lassa Fever never threatened to wipe out the world”.<sup>10</sup> Finally, with the technological advances and the collaborative work of countries and labora-

tories, there are the possibilities that an appropriate treatment and vaccine may be found soon.<sup>4</sup>

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