

# **Alternative diagnoses in 90 patients admitted for suspicion of severe acute respiratory syndrome (SARS)**

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# Introduction

Between March 16 and April 30, 2003,  
**90 patients** were hospitalized (>24 hours)  
in a referent Infectious Diseases Department for  
suspicion of SARS.

This suspicion was based on a potential  
epidemiologic risk and a compatible clinical  
presentation with fever and/or respiratory  
symptoms

# Suspicion of SARS: management of the patients

Because of suspicion, all patients isolated, in a single room

Restricted biological parameters , with secured laboratory technics: hematology, transaminases, creatininemia.

Chest X-ray done at bedside.

All patients with pneumopathy given amoxicillin and roxithromycin. No antiviral treatment given.

# Clinical presentation of the 90 patients

	N	%
<b>Cough</b>	63	<b>70</b>
<b>Fever &gt; 38°C</b>	41	<b>45,6</b>
<b>Cough and Fever &gt; 38°C</b>	31	<b>34,4</b>
<b>Other respiratory symptoms</b>	16	<b>17,8</b>
Dyspnea	10	11,1
Polypnea	1	1,1
Thoracic pain	3	3,3
Hemoptysis	2	2,2
<b>Digestive tract symptoms</b>	6	<b>7</b>

**→ NON SPECIFIC manifestations of  
RESPIRATORY INFECTION**

# Biological data on 88 patients

	N	%
Normal parameters	37	<b>48,7</b>
Leucopenia < 3500/mm <sup>3</sup>	3	3,3
<b>Lymphopenia &lt; 1000/mm<sup>3</sup></b>	27	<b>36,5</b>
Lymphopenia < 500/mm <sup>3</sup>	6	8,1
Lymphopenia with leucopenia	2	2,7
<b>Thrombopenia &lt; 150000/mm<sup>3</sup></b>	9	<b>10,2</b>
Increased transaminases levels (n = 76)	6	<b>7,9</b>

# Radiological presentation

	N	%
<b>Chest X-ray (n = 86)</b>		
Normal	68	<b>79,1</b>
Pneumopathy	15	<b>17,4</b>
- lobar	12	14,0
- lobar and interstitial	1	1,2
- interstitial	2	2,3
Other	3	3,5
<b>Tomodensitometry (n = 7)</b>		
Normal	6	86
Broncho-pneumopathy	1	1,2

# Alternative diagnoses

Alternative diagnoses were looked for to exclude the suspicion of SARS, allowing to stop the isolation and introduce appropriate treatment.

Isolation of causative organism:

→ From nasopharyngeal/respiratory secretions:

RT-PCR of coronavirus, myxovirus A and B, metapneumovirus and VRS

Bacteria

→ Other sites (blood, urine, stool) for bacterial cultures and serologies

# Alternative diagnoses in 17 of 90 (19%) patients with suspicion of SARS

N (%)

## 1- Other viral respiratory infections

Myxovirus influenzae A	2	2.2
Myxovirus influenzae B	2	2.2
Metapneumovirus	1	1,1

# Alternative diagnoses (n=17/90)

	N	(%)
<b><u>2- Other respiratory infections</u></b>		
<b>Pneumococcal pneumonia</b>	4	4.4
<i>Mycoplasma pneumoniae</i> pneumonia	1	1.1
<b>Tuberculosis and tuberculosis sequellae</b>	2	2.2
<i>Burkholderia pseudomallei</i> pneumonia (the only asian acquired infection)	1	1.1
<b>Acute maxillary sinusitis</b>	1	1.1

# Alternative diagnoses (n=17/90)

	N	(%)
<b><u>3-Other non respiratory infections</u></b>	<b>3</b>	<b>3,3</b>
Endocarditis	1	1.1
<i>Salmonella species</i> enterocolitis	1	1.1
Pyelonephritis	1	1.1

All patients were cured, including the patients with other causes of pneumonia.

# Which diagnosis for the other 73 patients (81%)?

The case of each patient was discussed between clinicians and epidemiologists (INVS).

## **73 patients without certified diagnoses**

No SARS coronavirus isolated of 19 samples tested

Low availability or sensitivity of PCR-coronavirus at that time

Each patient was allowed to go out of hospital only after 48 hours without fever to be careful in the situation of epidemic risk.

# Collaborative assessment diagnosis between epidemiologists and clinicians

→ Final evaluation:

all patients = « **excluded** » cases by epidemiologists

**47 (51%)** = « **possible** » or « **doubtful** » cases by clinicians

# CONCLUSION (1)

**Alternative diagnoses in 20% of the patients with suspicion of SARS:**

Some other respiratory pathogens but also some « unexpected diagnoses »

Based on clinical expertise since restricted investigations

- Allow cessation of isolation
- Improve facility for care
- Initiate appropriate treatment

# CONCLUSION (2)

**Definite diagnosis of coronavirus infection:**

→ Virological technics for identification and culture

→ Storage of sera for retrospective serologies