



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

SEVERE ACUTE RESPIRATORY SYNDROME (SARS) : A BOLT FROM THE BLUE

PA Thomas

It all began innocuously enough, with a small item in the newspaper in early February 2003 hinting at a possible link between a severe form of atypical pneumonia seen in Guangdong province of mainland China and Hong Kong, and in far-away Toronto. Could anyone have imagined at that time that in the space of just two months, this mystery illness would capture the world's imagination, and vie with a military operation for global attention? As of April 2, 2003, a total of 2,223 suspected and/or probable SARS cases had been reported to WHO from 16 countries, including the U.S.A., causing 78 deaths (case-fatality proportion of 3.5%);¹ as of today, (May 14, 2003), the figure is about 7500 suspected/probable cases and 588 deaths being reported from about 26 countries.² By the time this Editorial appears in print, it is difficult to say how many more people would have been affected.

The public at large have become aware of the disease because of the extensive coverage by the media. Lethal virus outbreaks probably help to sell newspapers.³ However, one must appreciate the intense epidemiological investigations that were able to unravel, within a matter of weeks, the putative sequence of events leading to the epidemic: an outbreak of severe atypical pneumonia in Guangdong in November 2002, possibly resulting from the mutation of the parent virus in animals, and its transfer to humans; the carriage of the virus from Guangdong to Hong Kong through a medical professor; transfer of the virus from the professor to some guests in the Hong Kong hotel in which he stayed; and dissemination to the world at large from Hong Kong. This epidemiological exposition permitted appropriate health care measures to be rapidly instituted in the countries which bore the brunt of the initial outbreaks. Vietnam, which was greatly affected initially, has now been declared SARS-free, and Singapore hopes to follow suit in a couple of weeks.

The SARS epidemic has also helped to illustrate the giant strides made in clinical microbiology in the past 25 years. During the outbreak of Legionnaire's disease in 1976 in the USA, it took almost one year for the aetiological agent (*Legionella pneumophila*) to be

isolated and identified. In the SARS outbreak, however, the aetiological agent was quickly suspected to be a virus. In March 2003, a novel coronavirus was discovered in association with cases of SARS.⁴ A few weeks later, sequencing of the 29,571 base genome of the Tor2 isolate of the virus revealed that this is only moderately related to other known coronaviruses, and does not closely resemble any of the three previously known groups of coronaviruses.⁵ It is hoped that unraveling of the genome sequence will aid in the diagnosis of SARS virus infection in humans and potential animal hosts (using PCR and immunological tests), in the development of antivirals (including neutralizing antibodies), and in the identification of putative epitopes for vaccine development.

One lesson to be learnt from this epidemic is the necessity for free exchange of information and for constant vigilance against the emergence of new, unexplained illnesses. Another important lesson is the continued relevance of elementary hygienic precautions when dealing with any infected individual. In a case control study in five Hong Kong hospitals, with 241 non-infected and 13 infected staff with documented exposures to 11 index patients with SARS during patient care, 69 staff who reported use of mask, gloves, gowns and hand-washing were not infected, whereas all infected staff had omitted at least one measure.⁶ Fewer staff who wore masks, gowns and washed their hands became infected compared to those who did not, but stepwise logistic regression was significant only for masks. The authors concluded that the practice of droplets precaution and contact precaution is adequate in significantly reducing the risk of infection after exposures to patients with SARS, and that the protective role of the mask suggests that in hospitals, infection is transmitted by droplet.

Interestingly, in India, although more than 20 individuals have been shown by laboratory investigations to harbour the coronavirus, none appears to have developed the disease in its most severe form. It would be worthwhile investigating whether there is any genetic or environmental reason to explain this phenomenon.

Institute of Ophthalmology, Joseph Eye Hospital,
Tiruchirapalli - 620 001, Tamilnadu, India.

References

1. Update: outbreak of severe acute respiratory syndrome - worldwide, 2003. *MMWR Morb Mortal Wkly Rep* 2003;**52**:269-272.
2. World Health Organization SARS website. Cumulative number of reported probable cases of SARS. <<http://www.who.int/csr/sars/country/2003-05-13/en/>>.
3. Dixon B. Editors sound the SARS alarm bells. *Curr Biol* 2003;**13**:R339-340.
4. Ksiazek TG, Erdman D, Goldsmith CS, Zaki SR, Perei T, Emery S, *et al.* A novel coronavirus associated with severe acute respiratory syndrome. *N Engl J Med* 2003;**348**:1953-1966.
5. Marra MA, Jones SJ, Astell CR, Holt RA, Brooks-Wilson A, Butterfield YS, *et al.* The genome sequence of the SARS-associated coronavirus. *Science* 2003;**300** (5624):1399-1404.
6. Seto WH, Tsang D, Yung R, Ching TY, Ng TK, Ho M, *et al.* Effectiveness of precautions against droplets and contact in prevention of nosocomial transmission of severe acute respiratory syndrome (SARS). *Lancet* 2003;**361** (9368):1519-1520.



Medical Specialities Pvt. Ltd.

Offers you range of Hitech Disinfectants

- | | |
|--|--|
| BIOCLENZ-HD
(2 propanol, 1 propanol
with Mecetronium Ethylsulphate) | - Alcoholic Hand Wash
Effective against HIV and HBV |
| BIOCLENZ-C
(Glutaraldehyde 2%) | - Surgical Instrument disinfectant |
| BIOCHEK
(Chlorhexidine gluconate and
Cetrimide Solution) | - Antiseptic Solution |
| BIOCLENZ-PV
(Povidone Iodine 5%) | - Antiseptic Solution |
| GERMICLENZ-H
(Benzalkonium Chloride) | - Surface Disinfectant |
| ULTRASONIC AND ECG-GEL | - Scanning and ECG-GEL |

Manufactured by :

P.S.K. PHARMA PVT. LTD.

No. 21, 121/22, Mahajenahalli, Shimoga Road, HARIHAR - 577 601, KARNATAKA.