

Psychiatric complications in patients with severe acute respiratory syndrome (SARS) during the acute treatment phase: a series of 10 cases

S. K. W. CHENG, J. S. K. TSANG, K. H. KU, C. W. WONG and Y. K. NG

Summary In February 2003, Hong Kong was hit by a community-wide outbreak of severe acute respiratory syndrome (SARS). During the period of the outbreak, 10 patients with SARS with psychiatric complications were referred to our Consultation and Liaison Psychiatry Team for assessment and management. We found that both the direct and indirect effects of SARS such as symptom severity, total isolation during treatment and administration of steroid were probable causes of psychiatric complications. In this paper, we report on the nature of their psychiatric problems, challenges to management and psychiatric treatment strategies used during the acute phase.

Declaration of interest None.

Severe acute respiratory syndrome (SARS) is a highly contagious disease caused by a novel strain of coronavirus (Ksiazek *et al*, 2003). The first case was in mid-November 2002 in Guangdong Province, China (World Health Organization, 2003). From February to July 2003, a cumulative total of 1755 cases of SARS and 299 deaths were reported in Hong Kong alone (Department of Health, 2003).

At the acute phase of presentation, common symptoms include fever, influenza-like chills, myalgia, malaise, dizziness, diarrhoea, soreness of the throat and loss of appetite (Donnelly *et al*, 2003; Lee *et al*, 2003). In many cases, rapid and drastic loss of respiratory functioning necessitated that the patient was put on a ventilator in the intensive care unit. There would be immediate and complete segregation from the family, and prospects of fatality are real and present. The case-fatality ratio of SARS is estimated to be about 15% (World Health Organization, 2003).

Considering the nature and features of SARS, challenges to management of psychiatric problems during the acute phase are enormous. First, strict infection control and barrier treatment in hospitals are essential for the management of SARS because it is highly contagious. Comprehensive psychiatric assessment and psychotherapy, which usually require lengthy and close face-to-face contact, become impractical because of the great threat to infection control. Second, corticosteroids are commonly administered in massive doses to combat the cytokine storm and reduce the inflammatory responses in the treatment for SARS (Lee *et al*, 2003). Steroid-induced mental disturbances could emerge and persist, particularly if the steroid regimen needs to be continued.

With these challenges in mind, we report some common psychiatric manifestations and our management strategies used in patients with SARS during the acute phase.

METHOD

Subjects

These were 10 patients with confirmed SARS (four males) aged 18–74 years (mean=34.8, s.d.=15.6) from the Princess Margaret Hospital, Kwong Wah Hospital and Wong Tai Sin Hospital in Hong Kong. The patients were referred to us for assessment and management in April 2003. None of them had any psychiatric history.

Modes of service delivery

Because of the total barrier nursing, we prepared two modes of service delivery with different exposure risks: telephone interviews and face-to-face interviews. The option for one mode over the other depended on the nature and severity of the psychiatric complaints. Patients with mild psychiatric symptoms received telephone interviews, whereas those with more severe symptoms received face-to-face interviews

if considered advisable by the treating physician.

Protocols for the psychiatric interview

Interviews were conducted first with nursing staff, then with the family and finally with the patient. The aim was to rationalise unnecessary strain on the patient.

For telephone interviews, a neuro-psychiatric symptom checklist including six domains and 22 items (Table 1) was employed for screening purposes. The design of the checklist was based on existing knowledge pertaining to steroid-induced psychiatric problems (Sirois, 2003) and common stress responses in traumatic illnesses.

When psychiatric medication was deemed necessary, patients received a face-to-face interview with the psychiatrist.

RESULTS

On the basis of the information in the referral letters, seven patients were deemed to have 'mild' psychiatric problems such as anger, anxiety, suicidal ideas and depressive reaction. All seven patients received telephone interviews. Another three patients with more 'severe' psychiatric problems such as hallucinatory and manic features received face-to-face interviews. However, after the initial telephone contact, one additional patient was found to have prominent psychotic features and subsequently received a face-to-face interview.

Table 1 Neuropsychiatric symptom checklist

Domain	Items
Cognitive function	Profound distractibility, memory impairment, disorientation to time and place
Psychosis	Auditory hallucinations, visual hallucinations, delusional beliefs
Mania	Pressured speech, hypomania, emotional lability
Depression	Severe insomnia, low mood, apathy, mutism, suicide ideas, crying
Anxiety	Agitation, fear, tension
Behavioural problems	Aggressive outbursts, abscondance, non-compliance, deliberate self-harm

Psychiatric diagnoses

According to ICD-10 criteria (World Health Organization, 1992), five patients were diagnosed as having adjustment disorder, two were diagnosed as having organic hallucinosis, two as having organic manic disorder and one had no diagnosis.

Probable causes of psychiatric problems

All the patients with adjustment disorder reported that their distress resulted from specific effects of SARS, including symptom severity and isolation. Two patients had depressed mood and suicidal ideas associated with symptom severity. One patient had frequent diarrhoea for more than 10 days and another suffered from persistent severe sore throat which affected her food intake. Three had prominent distress resulting indirectly from total social isolation because of barrier nursing. Two patients were a married couple who were depressed after being informed about the sudden physical deterioration of their daughter, who also had SARS. Their depressive symptoms were further exacerbated by being separated from each other during the acute phase of treatment. One female patient developed anxiety symptoms after witnessing the abnormal behaviours of another SARS patient who had organic hallucinosis. She forced herself to stay awake at night because she perceived herself as being trapped in an inescapable environment and felt that something catastrophic might happen to her if she fell asleep.

Of the four patients with organic hallucinosis or organic manic disorder, three experienced increased mental symptoms when the steroid therapy was stepped down at the end of the acute treatment phase. The remaining patient had psychosis when massive doses of pulsed steroid treatment were first given. In terms of symptoms, the first patient with organic hallucinosis reported prominent visual and auditory hallucinations, persecutory delusion and, on a few occasions, disorientation to place and time. The second patient with organic hallucinosis was highly suspicious, with persecutory belief and auditory hallucinations of gossip. For the two patients with organic manic disorder, both had delusions of grandeur, elated mood and occasional suicidal ideas. One of them felt so energetic that he did physical exercises in the ward using bottles of water as weights. This patient left the hospital for several hours but later returned. Another

SAMMY KIN-WING CHENG, PhD, JENNY SUK-KWAN TSANG, MRCPsych, KWOK-HUNG KU, MRCPsych, CHEE-WING WONG, PsyD, YIN-KWOK NG, MRCPsych, Kwai Chung Hospital, Hong Kong

Correspondence: Dr Sammy Kin-wing Cheng, Clinical Psychology Service Unit, Kwai Chung Hospital, Hong Kong, China. Tel: 852 2959 8339; e-mail: sammykcheng@cuhk.edu.hk

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patient with organic manic disorder had alternating mood swings after injection of steroid and ribavirin.

One patient received no psychiatric diagnosis. She expressed anger and fear of possible spread of the virus to her family because a physician had earlier misdiagnosed her as not having SARS.

Management of adjustment disorder

All patients with adjustment disorder received telephone counselling. It aimed at giving patients the skills to alleviate symptoms of distress and teaching the family proper ways to convey support. Specific intervention elements consisted of rendering supportive counselling to patients; giving patients cognitive-behavioural skills to combat anxiety and depressive features; and fostering closer social ties among family members through regular telephone contact and real-time video conferencing. Finally, to enhance therapeutic alliance, patients and the family were given a mobile telephone number for contact with the clinician. They were encouraged to seek counselling and consultation at any time of the day during the period of stay in hospital.

Management of steroid-induced mental disturbances

All the four patients with steroid-induced psychiatric disturbances were prescribed a low dose of neuroleptic medication (haloperidol 1.5–5 mg nocte). This resulted in a rapid decrease of psychotic and manic symptoms within 3–5 days.

DISCUSSION

Patients with SARS and psychiatric complications in the acute phase pose great challenges to clinicians. Their behavioural disturbances and psychotic symptoms can lead to non-compliance with infection control measures. Prompt recognition of psychiatric problems and early psychiatric treatment are thus essential. However, in the 2003 SARS outbreak in Hong Kong, there was a paucity of knowledge about maintaining zero infectivity, even in isolation

wards. Clinicians were wary about non-essential personnel (including psychiatrists and clinical psychologists) visiting the bedside unless it was absolutely necessary. We had to strive for a balance between strict isolation measures and face-to-face psychiatric assessment and intervention. We did so by the use of telephone contact in the first instance, followed by liaison with the treating physician, the ward nurses and the relatives. Providing patients with a mobile telephone contact was much appreciated and gave a sense of security at a time of great psychological upheaval. When psychiatric treatment and medication were required, we provided face-to-face consultation with the patient, with close monitoring of the progress of symptoms by members of the medical team. We are beginning to learn more about the psychiatric and psychological sequelae of SARS, and the medication ramifications that go with treatment. With this experience, we hope that psychiatrists and clinical psychologists will be better prepared and better informed as to the best practices for these patients, should there be another outbreak.

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