Prevalence of epilepsy in Hong Kong

To the Editor—There is a glaring lack of data on the epidemiology of epilepsy in Hong Kong, even though epilepsy is the most common serious chronic neurological condition. Attempts to fill this knowledge gap are therefore welcomed. We feel, however, that it is necessary to point out fundamental flaws in the methodology of the 'prevalence' study of Fong et al published in this Journal.[1] Their results may misrepresent the true impact of this stigmatising and potentially devastating condition, and may result in the inappropriate distribution of resources.

We have two major concerns about the results of this study. Firstly, the reported prevalence of active epilepsy of 1.54 per 1000 population is remarkably low. In contrast, in their review of studies of active epilepsy from different countries of the world, Sander and Shorvon[2] found prevalence rates of 4 to 10 in 1000. The figure reported in the paper of Fong et al is also substantially lower than the lifetime prevalence rates of 4.4 in 1000 and 7.0 in 1000 published in two major studies in mainland China.[3,4] The most likely explanation for this difference is that only patients attending a single specialist clinic were included; this is also reflected in the absence of the expected peak in elderly patients with epilepsy. Community surveys have been known to result in prevalence rates twice those found in hospital-based studies.[2] The methodology used by Fong et al, as well as their results, suggest that the prevalence of active epilepsy obtained in their study is a gross underestimation. Epilepsy is a chronic condition, and patients are commonly seen in clinics of medical specialties (eg geriatric and general medical clinics), other specialty clinics (eg neurosurgical and psychiatric clinics), general out-patient services, and the private sector. While prevalence rates from a single centre may be accurate for disorders that are likely to be seen at a specialist institution (eg leukaemia) or for emergency conditions such as acute stroke, they are less likely to be accurate for chronic disorders that are managed primarily in the out-patient setting. It is improbable that the results from a single tertiary teaching hospital could be extrapolated to give accurate community-wide results. This study should perhaps be more appropriately viewed as a descriptive analysis of clinical characteristics of patients attending a specialist centre.

The second area of concern is the breakdown of seizures and syndromes among patients. In a study of 300 consecutive patients that used uniform assessment and magnetic resonance imaging, King et al[5] found that 59 (20%) had unclassified seizures, compared with less than 6% of patients in the article by Fong et al. In addition, Fong et al reported that 285 patients had idiopathic epilepsy syndromes, of whom less than 5% had juvenile myoclonic epilepsy and childhood absence epilepsy. Although these two latter syndromes may constitute a minority of cases of idiopathic epilepsy among paediatric patients, they are usually the major diagnoses in adults.

Scientifically valid epidemiological studies on epilepsy are long overdue. The results of the study by Fong et al have highlighted the need to conduct a truly community-based prevalence study of epilepsy in Hong Kong. Such a study is currently underway as a project of the Hong Kong Epilepsy Society.

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Authors' reply

To the Editor—Thank you for Hui and Kwan's comments and listing our concerns regarding the local epidemiological data for seizure disorders.[1] Method and thoroughness of case ascertainment is a prime determinant of the precision of epidemiological figures.[2] As mentioned in our paper, due to the intrinsic constraints of the methodology, it is likely that our figure is an underestimation of the true prevalence figure of Hong Kong.[1] Similar local epidemiology studies were conducted and yielded similar prevalence rate.[3,4] Regarding your second concern, classification of seizure

disorder depends very much on experience and effort. This might explain the low rate of unclassifiable subjects. In addition, it is a general impression of local epileptologists that specific epilepsy syndromes, like juvenile myoclonic epilepsy or childhood absence epilepsy, are less commonly seen in the adult population in this locality compared to western population.[5-7] Difference in remission rate of respective epilepsy syndromes of western and Chinese population may be another explanation. Nevertheless, we believe our data are a true reflection in this aspect. It is likely due to the difference in genetic constituent and yet to be proven. Longitudinal follow-up and further meticulous electro-clinico-anatomical validation of each single patient by epileptologist in both paediatric and adult epilepsy/ neurological centres is indicated.

We appreciate Hui and Kwan's effort of emphasising our concerns and their listing of our concern of immense need of a local population-based epidemiological study.[1] Nevertheless, we also appreciate Hauser's comment, "No single method will identify all case of epilepsy in any population."[2]

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Severe acute respiratory syndrome and respiratory protection

To the Editor—Severe acute respiratory syndrome (SARS) emerged last year as a new infectious disease,[1] as well as an occupational hazard[2] for health care workers treating infected patients. The Centers for Disease Control and Prevention (CDC) recently drafted guidlines[1] suggesting that routes of transmission of the SARS-associated coronavirus (CoV) involve the mucous membranes, such as the respiratory system and conjunctivae of the eyes (ocular and fomite viral). Correspondence by Wong[3] in the Journal suggests that the N-95 mask (respirator) is "appropriate" in the protection against the SARS CoV. This notion is supported by the CDC's recommendation that N-95 respirators be worn to protect health care workers against inhalation hazards from SARS.[1] I have recently suggested that a higher level of protection (ie a full-face air-purifying respirator; FFR) is warranted,[4] because droplets under appropriate conditions may dry out and result in small airborne particles.[5] Occurrence of these particles seems to be most relevant to the spread of SARS when health care workers perform aerosol-generating procedures,[6,7] especially because the SARS CoV may survive outside the body for longer than 48 hours.[7]

Studies of the protection provided by barriers and respirators have found that paper[8] and surgical masks[9,10] are inadequate, but that N-95 respirators are both adequately protective[8] and inadequately protective.[6,9] The researchers note, however, that N-95 masks were not fit-tested in every case. Overall, these studies suggest that N-95 respirators do not have optimal efficiency. It should be noted that fit-testing alone is unlikely to remedy the problems associated with N-95 respirators, especially because cases of SARS have been reported among people who had used fitted N-95 respirators along with other protective equipment, including eye and face shields.[10] To provide the best protection against airborne and droplet transmission, the use of an elastomeric FFR with an ultralow penetrating air (ULPA) filter has been suggested.[4] This type of respirator will provide protection for the conjunctivae of the eyes and reduce leakage at the face seal.[4] Eye protection is important because health care workers using fitted N-95 respirators, other protective equipment, and eye and face shields have contracted SARS.[6,10,11] Because ULPA filters can filter out mono-dispersed particles of 120 μm or larger[12] and because the SARS CoV is about 60 to 80 μm,[12] ULPA filters might be more efficient than high-efficiency particulate air (HEPA) filters,[4] especially when aerosol-generating procedures are performed. However, when aerosol-generating procedures are not being performed,[2] the existence of electrostatic charges[5] on the SARS CoV and the low likelihood of droplet formation may allow HEPA filters to be used.

One recent report has suggested that powered air-purifying respirators be used to protect against SARS.[14] These respirators work under positive-pressure, whereas FFRs work under negative-pressure. The limitations of powered air-purifying respirators include their bulkiness, the need for a battery (which limits its duration of use), and increased weight. The biggest advantage of powered