Facing the Pandemic in Australia

By Claire Barrett, BSc, MBBS, MRCP(UK), FRACP

Much has been said about the care of rheumatology patients, and whether they should be one of the first groups to receive the H1N1 vaccine, which will be available in Canada by November this year. As seen in the Hallway Consult of the last issue of *The Journal of the Canadian Rheumatology Association (CRAJ)*, there is still much that is unknown about the virus, but the best medicine appears to be preventative (*i.e.*, washing hands, covering mouth with hand or arm while coughing/sneezing, etc).

Dr. Claire Barrett, a rheumatologist from Australia, gives her Canadian colleagues sage advice and insight on caring for immunosuppressed patients during a pandemic.

1. When did the Swine Flu begin affecting sufficient numbers of Australians to become a major public health issue?

The first cases were identified in late April 2009 and by early May, Australian health authorities began to raise concerns.

2. Is the incidence of Swine Flu starting to decline in Australia?

Actually, we had been advised that August would be our peak. While there is the potential for a second wave, we hope we are, or will be very soon, seeing a decline in cases, but only time will tell if the disease starts to simmer down in September.

3. How many Australians have been affected by the Swine Flu?

Australia has the fifth-highest number of cases and the third-highest rate of infection among the top-five affected nations. As of August 19th at noon, Australia had:

- 32,224 confirmed cases of pandemic (H1N1) 2009;
- 121 deaths associated with the virus;
- 460 people hospitalized due to the virus;
- of those hospitalized, 100 in Intensive Care Units (ICUs); and
- a total of 3,802 hospitalizations since the pandemic (H1N1) 2009 was first identified.

No Australian state or territory has been spared, although Victoria initially did seem to have an as-yet unexplained high number of cases.

4. Has there been a disproportionate incidence of Swine Flu in the rheumatic-disease population, especially in those taking immunosuppressive drugs like the anti-TNF therapies?

To date, and to most rheumatologists' surprise, we have not seen a high level of the infection in immunosuppressed patients, whether that be from biological DMARDs, in transplant patients or other causes of immunosuppression. It has been suggested that cytokine storms, with elevation of pro-inflammatory cytokines including TNF, Il-1 and Il-6 and the anti-inflammatory cytokines, were responsible for a significant number of the deaths during the 1918 influenza pandemic, which killed a disproportionate number of young adults.

Similarly, some offer this as the probable reason for many deaths during the SARS epidemic in 2003. The mortality rates from H1N1 have been highest among those aged between 15 and 40 years, which has led to speculation that cytokine storms could similarly be responsible for these deaths. As such, one could speculate that perhaps TNF inhibition and a less-than-perfect immune system might be an asset rather than a liability.

5. Has temporary withholding of disease-modifying drugs been of value in either reducing the incidence or severity of the flu in the rheumatic-disease populations?

This is a very difficult question to answer as we really have not seen the cases. Nonetheless, we have taken a pragmatic approach as outlined in our guide to patients, which was adapted from the British Society for Rheumatology's recommendations.

6. Have there been a disproportionate number of severe cases (including mortality) in the rheumatic-disease population?

Seemingly not. None of the ICU admissions locally have been in patients with rheumatic disease or indeed any form of formal immunosuppression.

7. What are the major risk factors noted in Australia for incidence of Swine Flu and severity of the illness?

Current Australian recommendations include a focus on early treatment of people who may be vulnerable to

severe outcomes. These people include pregnant women and those with respiratory diseases (*i.e.*, asthma, COPD), heart disease, diabetes, renal disease, morbid obesity, and immunosuppression.

8. Are pregnant women, those with pre-existing diseases, especially with respiratory illnesses like emphysema, and younger people, still the persons at greatest risk?

One is always cautious about pregnant patients and those with respiratory dysfunction, but there does seem to be a high number of cases, including some fatalities, that seemingly involve no risk factors at all.

However, the majority of cases appear to involve people aged less than 30 years, supporting a theory that older individuals have cross-reactive antibodies to Swine Influenza A from previous infection or immunization.

9. Has oseltamivir been used widely in Australia?

Yes. In May this year, the provider reported it had been supplying community pharmacists via pharmacy wholesalers close to 20 times the normal annual orders for oseltamivir in Australia following the overseas outbreak of the H1N1 flu.

Anti-influenza drugs are not usually available on the Pharmaceutical Benefits Scheme, but the national stockpile has been released for treatment during this outbreak. It was recommended that prophylaxis should be provided to as many readily identifiable contacts as possible during the contain-response stage, with continued provision to household contacts during the sustain-response stage. In some areas, demand has resulted in temporary unavailability of oseltamivir and the substitution of zanamivir.

10. Have individuals with rheumatic diseases been prescribed oseltamivir either as a prophylaxis for the H1N1 flu or for early treatment?

There probably have been cases, but to date the more than 100 biologic DMARD-treated patients who I care for all have, fortunately, been unaffected. I know other colleagues with a larger number of biological DMARD-treated patients who also say "none of my patients on biologics or other immunosuppressive therapies have developed H1N1." We all add "so far." We really hope we are past the peak, and will not see the high number of cases we have been concerned about.

11. Has prophylaxis been of value?

Currently, there is not enough information to tell. The immunosuppressed patient is regarded as having a greater risk of complications from influenza, and recommendations are made for treatment in clinically presumed or laboratory-confirmed cases. Patients are also recommended to consider treatment more than 48 hours after onset if their condition is severe and/or not improving.[1]

Further recommendations about the administration of prophylaxis following exposure for groups at risk of complications in the current protect phase of the pandemic are not generally indicated, except for immunosuppressed patients and closed communities. In fact, the degree of immunosuppression is not addressed. Fewer studies have been done in at-risk people. Thus, any evidence of benefit is still unclear.

12. Would you provide Canadian rheumatologists some comments about your experience dealing with this pandemic, and what should we be preparing for over the next few months?

We have, as of yet, not been overwhelmed with a disproportionate number of patients who have been infected by H1N1. All patients taking corticosteroids, DMARDs such as MTX or leflunomide, and biological DMARDs are strongly encouraged to have the usual seasonal flu vaccine.

It remains to be seen whether that has really offered them any protection against H1N1. Some think that, as the number of deaths is much less than predicted, perhaps it does give some protection, but we have yet to see the epidemiology of those who contracted the disease in terms of vaccination status. I am assured the infectious disease physicians are looking into it.

We all have been vigilant in looking for signs and symptoms of the Swine Flu in immunocompromised patients, including those taking TNF-inhibitors, but we have tried not to overreact. General recommendations of frequent hand-washing using soap and water, especially after coughing or sneezing, usage of alcohol-based hand cleaners, avoiding close contact with sick people, and staying home if you are sick have been promoted.

Reference:
1. Senanayake SN. Swine flu update: bringing home the bacon. Med J Aust 2009; 191:138-141.

Dr. Claire Barrett trained at the University College, London, graduating in 1987. She worked in London before relocating to Australia to complete rheumatology training in Brisbane, in 1996. Subsequently she commenced work at Redcliffe Hospital as Visiting Medical Officer, initiating a specialist rheumatology clinic. She also runs a private practice in Redcliffe. She has been with the ARA Therapeutics Committee since 2005, and became Chair in May of this year.