

# Why we still need to think of **RHEUMATIC FEVER**

Māori in New Zealand, particularly those living in the upper North Island, have one of the highest rates of acute rheumatic fever and rheumatic heart disease in the world.<sup>1</sup> For those of us who live and practise in other parts of the country, rheumatic fever is a disease found only in textbooks or in older people with valvular heart disease, resulting from acute rheumatic fever some 50 to 60 years ago. Both acute rheumatic fever and rheumatic heart disease are largely preventable diseases.

In 2006, there were 103 cases of acute rheumatic fever in New Zealand, with a population rate of 2.5 per 100,000.<sup>2</sup> Māori accounted for 62% of these cases and 89% were under the age of 20 years.

The main factors contributing to these high rates are outlined in the recently developed New Zealand guidelines and include:<sup>1</sup>

- Overcrowded living conditions
- Socioeconomic deprivation
- An increased incidence of pharyngitis with group A streptococcus
- Decreased access to appropriate and effective healthcare

## **What is acute rheumatic fever?**

Acute rheumatic fever arises from an auto-immune response to group A Streptococcus infection, usually from the upper respiratory tract. There is, on average, a latent period of three weeks between the initial infection and the development of acute rheumatic fever.

Acute rheumatic fever consists of an acute widespread inflammatory response that affects the heart, joints, skin and brain. The heart (specifically the mitral and/or aortic valves) is the only organ that suffers long term damage. Premature death is the ultimate consequence of rheumatic heart disease.

There is clear evidence that people on low incomes are more at risk especially if living in overcrowded environments. Māori are more likely to be over represented in this demographic.

In addition to higher rates of acute rheumatic fever and rheumatic heart disease, Māori also have higher rates of recurrence, and with every recurrent episode the risk

of permanent heart damage is increased. There is no evidence of a genetic susceptibility of Māori to rheumatic fever.<sup>3</sup>

It is important for GPs to maintain a high degree of suspicion of acute rheumatic fever within high risk groups. Children of European or Asian ethnicity and children living in the South Island rarely contract the illness.

There is currently no vaccine for group A streptococcus in New Zealand. Vaccines are being developed but, as there are many serotypes of streptococcus, they are not universal.

**The main task of the GP is to suspect the condition and then refer to secondary care for confirmation of the diagnosis and treatment.**

For more details on diagnosing and treating rheumatic fever, refer to the “New Zealand Guidelines for Rheumatic Fever”, available from:

<http://www.nhf.org.nz/files/Rheumatic%20fever%20guideline%201.pdf>

## **What can health professionals dealing with high risk groups do to prevent acute rheumatic fever?**

### **Set realistic practice goals**

Be aware of the level of risk within your practice community. Acute rheumatic fever is a notifiable disease. Information can be found in annual surveillance reports or by contacting the local Medical Officer of Health. Monthly surveillance reports on notifiable diseases can be accessed online at: [http://www.surv.esr.cri.nz/surveillance/monthly\\_surveillance.php](http://www.surv.esr.cri.nz/surveillance/monthly_surveillance.php).

Ensure practice staff are aware of the New Zealand guidelines for rheumatic fever and the management of sore throat.

Ensure the practice has a targeted approach to sore throat management. This means considering antibiotics for sore throat in people aged three to 45 years in high risk groups.<sup>4</sup> Rheumatic fever is unlikely to be seen in children under three years because their immune systems are not fully developed.

### **Engage patients in their health issues**

The key factor in primary prevention of rheumatic fever is the need to treat streptococcal throat infections in children who are at high risk. Educate whānau about the possible consequences of untreated throat infections: **“Sore throats matter”**.

An algorithm has been developed for the management of sore throat caused by group A streptococcus.<sup>4</sup> This algorithm includes information on managing sore throats within households and is available from: <http://www.nhf.org.nz/files/Guide%20for%20Sore%20Throat%20Management.pdf>

If there are three or more episodes of group A streptococcal pharyngitis within a household within a three month period, then all members of the household should have throat swabs and be treated with antibiotics (if positive for group A streptococcus). It is acceptable to wait for up to nine days for throat culture results as it is unlikely that rheumatic fever will occur within this time.

### **Agree on realistic patient health goals**

- If group A streptococcal pharyngitis is suspected or identified, then patients need to complete a ten day course of antibiotics (usually penicillin V). Ask the patient or their caregiver how they are going to achieve this.
- To reduce the spread of infection children who have group A streptococcal pharyngitis should not attend day care or school until treatment has been established for 24 hours. Ask the caregiver how they are going to manage this.

## HOW A COMMUNITY CONTROLLED THE STREPTOCOCCUS<sup>5</sup>

A community based primary prevention programme for rheumatic fever was initiated in Whangaroa, Northland in 2002. Pre-intervention rates of acute rheumatic fever for children aged five to 14 years were 424 per 100,000; one of the highest reported rates worldwide for school aged children. Risk factors identified were untreated group A streptococcal pharyngitis, overcrowding, poor access to medical care, geographical and seasonal differences.

The approach taken was:

- Taking swabs three times a week from school children with sore throats on an ongoing basis. This was to reach a “quality standard” so that there was no more than nine days between sore throat and treatment.
- Referral of those with a positive culture to a medical centre.
- Prescription of amoxicillin for ten days.  
N.B. Penicillin V is usually the recommended treatment, however amoxicillin was chosen for ease of use.
- An education programme regarding sore throats (and the connection with acute rheumatic fever)
- A community-owned partnership approach

A case of rheumatic fever in the area was notified eight days after the intervention started but no new cases have since been identified. It appears that rheumatic fever has been eradicated in Whangaroa and the ecology of streptococcus A in the area has been changed dramatically.

The reasons for the success of the programme are thought to revolve around the extensive community concern that provided an incentive to solve the problem, the “bottom-up” approach, the idea of a partnership between health providers, schools and the community and the employment of passionate local Māori providers.

This community based programme has been so successful that in early 2008 it was initiated in schools in Kaikohe, Northland. It is hoped that the success of the Whangaroa initiative can be replicated.

*Thank you to **Dr Jonathan Jarman**, Medical Officer of Health, Northland DHB, for his contribution to this item.*

## Secondary prevention of rheumatic fever

The current New Zealand recommendation for secondary prevention of rheumatic fever in adults is IM benzathine penicillin G every four weeks, usually for ten years. If the IM route is not appropriate or acceptable then oral alternatives can be used. For those who are allergic to penicillin, oral erythromycin is an acceptable alternative. The dosing and duration of antibiotics for children is less clear and specialist care will be required.

This long duration of antibiotics means careful follow up is needed for all people requiring secondary prophylaxis. This relies heavily on the use of rheumatic fever registers, effective education of patients and **whānau** and ways to reduce the discomfort of the IM benzathine penicillin G injection so that compliance is high. For Māori, the involvement of experienced community based Māori health workers who have a good knowledge of their local community may provide additional support. Practice arrangements need to be supportive and flexible for those requiring long-term antibiotics.

**N.B.** The injectable forms of penicillin are free when provided through an acute rheumatic fever prevention programme.

## Make it easy for patients to come back

When a patient from a high risk group with a sore throat presents for treatment, validate their attendance and stress the importance of not ignoring their symptoms.

The need to come back has a much more specific meaning for patients who have had acute rheumatic fever. Secondary prevention with ongoing antibiotic treatment is essential.

## Form partnerships

Community pharmacists can play a key role in giving appropriate advice for people with pharyngitis and encouraging patients in high risk groups to see their GP.

Community and school based group A streptococcal sore throat detection and treatment programmes are effective.

If GPs become aware of clusters of group A streptococcal pharyngitis the Medical Officer of Health should be informed.

## References

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