



# Finding a Better Treatment for Ear Disease

Project No. CD55 AATAAC (Azithromycin versus Amoxycillin for Treatment of Acute *Otitis Media* in Aboriginal Children)

## What's the project about?

Chronic suppurative *otitis media* (CSOM), or 'runny ears', is one of the most important health problems affecting young Aboriginal children in Australia today. Children with CSOM have significant hearing loss, which contributes to educational and social disadvantage.

CSOM has been a major public health issue for 25 years and the subject of numerous studies. Yet, high rates of the disease persist. Medical management varies considerably among clinicians, and current treatment options are viewed to have poor outcomes.

Past research has shown that CSOM can be prevented by successful treatment of acute *otitis media* (AOM), which is the precursor to CSOM. However, questions remain on the most effective way to treat AOM. The new pneumococcal conjugate vaccine is likely to reduce its incidence, but many other bacteria can still cause AOM. Antibiotics will be required to treat these conditions.

The project 'Azithromycin versus Amoxycillin for Treatment of Acute *Otitis Media* in Aboriginal Children', or AATAAC, was completed in 2005 and assessed the effectiveness of a new antibiotic treatment option for AOM. The new treatment, involving a single dose of azithromycin, was compared with the current recommended treatment of seven days with the antibiotic amoxycillin.

Initiatives to simplify the treatment regime for acute *otitis media* are important. Single dose azithromycin has been shown to be effective in one overseas study, but its effectiveness in Aboriginal children with more severe



*This was our first high-quality Randomised Controlled Trial across a large number of communities throughout the NT. Despite lots of challenges, the support of the communities and the participating families meant that 320 children joined the study and 94% of children were followed up with treatments and assessments. This is a great achievement and compares more than favourably with studies done in urban centres.*

cases of the disease needed to be tested. It was also important to know if the bacteria become resistant to azithromycin.

## Who's involved?

The project involved 16 Aboriginal communities throughout the Northern Territory (NT), with a focus on Aboriginal children under six years of age who were diagnosed either with acute *otitis media* without perforation (AOM/woP) or acute *otitis media* with perforation (AOM/wiP). Each community appointed a health clinic member to assist with the project.

The project was funded by:

- Menzies School of Health Research
- National Health and Medical Research Council (NHMRC)
- Cooperative Research Centre for Aboriginal Health (CRAH)

## Outcomes

### High rates of treatment failure

- The randomised control trial followed 302 of the 320 participating children involved in the treatment regime.
- Most of the children participating in the study were less than two years of age and had AOM/woP.
- Following treatment, about 50% of the children still had examination findings consistent with AOM.
- This high rate of treatment failure is quite different to that described in studies of other populations, and may explain why Aboriginal children suffer such high rates of persistent infection.

### Is azithromycin more effective than amoxicillin?

- No differences in the clinical outcomes were recorded between the two treatment groups.
- A single dose of azithromycin is roughly equivalent to a week of amoxicillin and may be a more effective treatment for persistent nasal discharge.
- This azithromycin medication given as a single dose was much more effective in reducing the number of children with bacterial colonisation of the Nasopharynx.

### Further research required

- Based on our results, we have now received funding from the NHMRC to conduct a further trial of azithromycin given over two weeks to children with bulging eardrums but no associated symptoms.



Ear Screening in Lajamanu

## Implications of findings for policy and practice

- Training for health staff in the diagnosis and treatment of AOM was provided throughout the study, and has continued since its completion.
- The results of this project have been presented to district medical officers, GPs and contributors to the *Central Australian Rural Practitioners Association (CARPA) Manual*.
- The project has provided best available evidence to authors of the *CARPA Manual*.
- Given our high treatment failure rate, we are planning further trials funded by the NHMRC around the role of antibiotics in ear disease.



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