The views of parents and carers on managing acute otitis media in urban Aboriginal and Torres Strait Islander children: a qualitative study

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The known: Acute otitis media is common in children, particularly in Aboriginal and Torres Strait Islander communities, and it is often assumed that antibiotic therapy is expected by parents. The risks and benefits of this approach require careful consideration.

The new: During a clinical trial, parents and carers of urban Aboriginal and Torres Strait Islander children acquired additional knowledge of acute otitis media and its treatment. Many found that watchful waiting was acceptable when consistent with treatment guidelines and their personal knowledge of their children.

The implications: Aboriginal and Torres Strait Islander parents and carers should be engaged in respectful partnerships when managing acute otitis media in their children.

Abstract

Objectives: To explore the views of parents and carers regarding the management of acute otitis media in urban Aboriginal and Torres Strait Islander children who are at low risk of complications living in urban communities.

Study design: Qualitative study; semi-structured interviews and short telephone survey.

Setting, participants: Interviews: purposive sample of parents and carers of urban Aboriginal and Torres Strait Islander children (18 months – 16 years old) screened in Aboriginal medical services in Queensland, New South Wales, and Canberra for the WATCH study, a randomised controlled trial that compared immediate antibiotic therapy with watchful waiting for Aboriginal and Torres Strait Islander children with acute otitis media. Survey: parents and carers recruited for the WATCH trial who had completed week two WATCH surveys.

Results: We interviewed twenty-two parents and carers, including ten who had declined participation in or whose children were ineligible for the WATCH trial. Some interviewees preferred antibiotics for managing acute otitis media, others preferred watchful waiting, expressing concerns about side effects and reduced efficacy with overuse of antibiotics. Factors that influenced this preference included the severity, duration, and recurrence of infection, and knowledge about management gained during the trial and from personal and often multigenerational experience of ear disease. Participants highlighted the importance of shared decision making by parents and carers and their doctors. Parents and carers of 165 of 262 WATCH participants completed telephone surveys (63%); 81 were undecided about whether antibiotics should always be used for treating acute otitis media. Open-ended responses indicated that antibiotic use should be determined by clinical need, support for general practitioners' decisions, and the view that some general practitioners prescribed antibiotics too often.

Conclusions: Parents and carers are key partners in managing acute otitis media in urban Aboriginal and Torres Strait Islander children. Our findings support shared decision making informed by the experience of parents and carers, which could also lead to reduced antibiotic use for managing acute otitis media.

Acute otitis media, one of the most common childhood illnesses,[1] is more frequent among indigenous than non-indigenous children around the world, including Aboriginal and Torres Strait Islander children.[2] Further, complications — including recurrent acute otitis media, persistent otitis media with effusion, chronic suppurative otitis media, and permanent hearing loss — are more likely for indigenous than non-indigenous children.[2,3]

Immediate antibiotic therapy is recommended for Aboriginal and Torres Strait Islander children with acute otitis media who live in remote communities or are otherwise at high risk of complications, including those with a first episode of otitis media before the age of six months, tympanic membrane perforation, craniofacial abnormalities, immunodeficiency, or trisomy 21.[3] Watchful waiting, together with analgesia for pain as needed, is recommended for Aboriginal and Torres Strait Islander children without specific risk factors and not living in remote communities.[3]

Despite rising antibiotic resistance rates, evidence that antibiotics provide only modest benefit, and the risk of adverse drug-related events, antibiotics are still prescribed for children with acute otitis media at low risk of complications.[4] Perceived parental or caregiver expectations have been cited in the United States as the rationale for prescribing antibiotics for children, including those with acute otitis media.[5,6] As this question has not been examined in Australia, we explored the views of parents and carers regarding the management of acute otitis media in Aboriginal and Torres Strait Islander children living in urban communities at low risk of complications.

Methods

We report our qualitative study according to the Standards for Reporting Qualitative Research checklist.[7] Our study was conducted within a network of urban Aboriginal medical services as part of the WATCH trial (Watchful waiting for Aboriginal and Torres Strait Islander Children with acute otitis media; Australia New Zealand Clinical Trials Registry 12613001068752, registered 24 September 2013), undertaken

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during 2014–2022.[8] The services included Aboriginal Community Controlled Health Services in Townsville, Brisbane, the Gold Coast, the Central Coast (New South Wales), Sydney, and Canberra, and also the Southern Queensland Centre of Excellence in Aboriginal and Torres Strait Islander Primary Healthcare in Inala (Brisbane). WATCH was a randomised controlled trial that compared watchful waiting with immediate prescribing of antibiotics for urban Aboriginal and Torres Strait Islander children (18 months to 16 years of age) with acute otitis media. Children who attended Aboriginal medical services in the research network were opportunistically offered ear screening; children with acute otitis media who met further eligibility criteria were invited to participate in WATCH.[8]

Research team

The authors were all research officers or investigators in the WATCH trial. They have diverse backgrounds, including as Aboriginal health workers, ear health researchers, and medical practitioners (general practice, paediatric medicine, otolaryngology). Four Aboriginal team members provided advice on study methodology and were involved in the interviews, data analysis, and preparation of the manuscript for this article.

Participants

We interviewed parents and carers of the Aboriginal and Torres Strait Islander children who had been screened for participation in the WATCH trial. We purposively sampled interviewees, with the assistance of site-based Aboriginal research officers, to maximise the range of their engagement and experience with WATCH, including parents and carers of children from both trial arms, parents and carers who had declined participation in WATCH, and others with children ineligible for WATCH because they were at high risk of complications. We also surveyed all parents and carers who completed week two WATCH surveys regarding their views on antibiotic prescribing for children with acute otitis media.

Data collection

During 16 May 2015 – 3 December 2020, we conducted semi-structured face-to-face or telephone interviews with parents or carers, according to their preference, at least three months after initial screening of their children for the WATCH trial. Informed consent was obtained, and interviewers explained that all views were acceptable and of interest. The interviews were audio-recorded and professionally transcribed.

Our brief telephone survey was administered by health service-based research officers two weeks after randomisation of the child to either the antibiotic or watchful waiting arm of WATCH (22 September 2014 – 24 November 2022). Parents and carers were asked whether they agreed with the statement, "I believe antibiotics should always be used for the treatment of middle ear infection (acute otitis media) in children" (five-point Likert scale). They were also asked, "Do you have any views on whether antibiotics are prescribed too little or too much by doctors?" (open response question).

All data were collected confidentially, stored securely in a non-identifiable (interview data) or re-identifiable (survey data) form, and were de-identified prior to analysis.

Data analysis

Interview data were analysed using reflexive thematic analysis grounded in philosophical constructivism.[9] Constructivism acknowledges that meaning is co-constructed by participants and researchers and supports reflection about how this affects all aspects of a study and its findings.[10] Data were analysed in NVivo 12 (QSR International). Themes were identified using initial coding followed by focused coding, including co-coding, and memo writing. Four team members led the coding, two of whom were Aboriginal, and subsequent analysis involved discussion and refinement of themes by the entire team. Data saturation for key themes was achieved. Quantitative survey data were collated and themed using a content analysis approach.[11]

Ethics approval

The study was approved by the Aboriginal Health and Medical Research Council Ethics Committee (938/13), the Western Sydney University Human Research Ethics Committee (13/012032/H10369), the Human Research Ethics Committee for the Northern Territory, Department of Health and Menzies School of Health (HOMER 13/2074), the Metro South Human Research Ethics Committee (HREC/13/QPAH/366), and the University of Queensland Medical Research Ethics Committee (2013001093).

Results

Interviewee characteristics

We interviewed 22 parents and carers. Twelve had children who had been recruited for the WATCH trial (including two with two recruited children each), eight were parents or carers of children not eligible for WATCH, and two had declined to participate in WATCH but agreed to interviews. Five children recruited for WATCH had been allocated to the antibiotic treatment arm (one withdrew before completing all study visits) and nine to the watchful waiting arm (two withdrew early). Twenty interviewees were women, eighteen were parents, three were grandparents, and one was an aunt. Sixteen interviews were undertaken face to face; thirteen interviews were conducted by two Aboriginal researchers. Ten interviewees were recruited on the Gold Coast, seven in Brisbane, four in the Australian Capital Territory, and one in Sydney. The median duration of all interviews was 27 minutes (range, 12–53 minutes). Parents and carers reflected on their past and recent experience with acute otitis media, including in children other than their own.

Parent and carer views on antibiotic use

Some interviewees preferred early antibiotic treatment, others favoured receiving a prescription that could be used should they later feel that their child required antibiotics. Several interviewees commented on antibiotic side-effects, and many expressed concerns about the overuse of antibiotics and the consequent risk of children becoming less responsive to treatment (Box 1).

Parent and carer views on watchful waiting

Many interviewees preferred watchful waiting to the immediate use of antibiotics. One parent had adopted a watchful waiting approach even after their child was prescribed antibiotics; others explained that, as they had already been watching and waiting, they expected immediate antibiotic therapy when they visited their general practitioner (Box 1).

Factors that influence the choice between antibiotic therapy and watchful waiting

Factors that influenced the preferences of interviewees included the severity of the illness (as indicated by the child's behaviour

1 Themes and codes derived from 22 interviews with parents and carers of Aboriginal and Torres Strait Islander children living in urban communities at low risk of complications from acute otitis media, with illustrative quotes

Theme/code	Illustrative quotes
Views on antibiotic use	
Antibiotics as first recourse	• I would rather give my children the course of antibiotics to make sure that the earache goes away... the risk of their eardrum bursting scares me. (PC12_20180313)
Delayed antibiotics as a strategy that strengthens parent/carer autonomy	• I'll just get one [prescription] just in case, because I don't want it to get worse over the weekend and us struggling to find a doctor's appointment because we're not open... (PC16_20200401) • I actually got to the point where I would have the doctor give me a script for next time, because... I would just diagnose it myself. (PC19_20200714)
Concerns about side effects of antibiotics	• I understand that if they're given antibiotics when they're not really sick, then they can actually make them sick. (PC3_20160301)
Overuse and risk of lack of effect	• ... he's been to a medical centre, where every time there's a hint, they'd rush him to the doctor and the doctor gave him antibiotics... (PC13_20190326) • ... but I'm aware that, you know that, I don't want to use something and then it not work when I really need it. (PC15_20200204)
Views on watchful waiting	
Preference for watchful waiting	• I took the script and then I thought I think I disagree and then I waited the weekend and then they seemed to be getting better so I just didn't give it to them. (PC11_20171218)
Parent may already have "done" watchful waiting before seeing the doctor	• I've already waited. I've already spent some time monitoring my child, as any responsible parent would do. (PC5_20160627)
Factors that influence the choice between antibiotics and watchful waiting	
Severity of illness as indicated by:	
• Impact on child's behaviour	• ... when it's too bad that's when they start... using the antibiotics. (PC1_20150916)
• Symptoms	• Depending on how my child was physically, like if she was still able to play and eat and drink and do all her daily functions... I wouldn't be highly concerned... (PC9_20170710)
• Duration	• Once I have done that for a couple of days and their symptoms haven't eased up... they need antibiotics. (PC3_20160301)
• Recurrence	• ... because he's had [middle ear infections] quite a bit. And also, he had a perforated eardrum, so he needed to have antibiotics... (PC20_20200729)
Belief that immune system is strengthened by not using antibiotics	• Because when they get ear problems all the time and you keep giving them antibiotics, I don't know, I've been around long enough that, germs don't kill kids. They actually help sometimes and they build... your immunity up. (PC13_20190326)
Alternatives to antibiotics, including analgesia	• Yeah, I'm all for not doing the antibiotics and trying to get through it with different sort of natural remedies. (PC8_20170427) • ... she really didn't need the antibiotics. Panadol would have been just as good. (PC10_20170824)
Improved knowledge of acute otitis media and its treatment:	
• New evidence	• I... didn't have a lot of knowledge on ear infections. I just thought... he might be needing antibiotics because his ear is red. Having a better understanding of what it's about kind of made me realise, okay, maybe he doesn't really need antibiotics straightaway. His body might be able to just fight it out and he might be fine. (PC16_20200401)
• Improved parent and carer understanding including through engagement in the trial	• I had never heard before other than when they started this trial... I just always thought that having ear infections and stuff was treated with medication and that was the best thing for it. So yeah, after hearing that there has been other areas that have been trialled, I didn't really have a preference. I was just interested to see if (because we've always been treated with antibiotics)... the watch and wait, to see what the outcome was, whether or not it'd get worse or whether or not it'd be okay. (PC2_20150916)
• Use of antibiotics sometimes depends on the doctor	• Some doctors will just prescribe it to get you in and out, there's certain doctors, not here, but that I won't go to for that reason... because they're a bit dodgy. (PC6_20160707)
Decision making by general practitioner and parents	
• Partnership	• ... I do listen to the doctor, but the doctor was on the same page as me that day, so just wanting to wait and see what eventuated. (PC9_20170710)
• Parent knows the child best	• I can be sort of in the middle with that, but at the end of the day, if I know that my kids need it I will push for it and deal with the consequences. (PC3_20160301)
Intergenerational experience of grandparents	• Well, [antibiotics] used to be used too much... they were the cure for everything. You'd go to the doctor and you'd get antibiotics. But nowadays, I find that they're a bit more reserved and they look more into other ways of cure than just strict antibiotics. (PC20_20200729)

and symptoms), illness duration, and history of recurrent acute otitis media. Some interviewees mentioned the need to support the immune system and other therapies (including analgesia) as alternatives to antibiotics for managing acute otitis media. Changes in knowledge about ear disease and its management included learning from the health service-based WATCH research officers. Several interviewees commented that doctors often prescribed antibiotics when they did not appear to be indicated. Many parents and carers stressed the importance of their involvement in decision making, either in partnership with the doctor or by making management decisions themselves, as they knew their children best. The experience with acute otitis media in other children was often discussed; grandparents noted management changes over time, particularly with respect to antibiotic treatment (Box 1).

Survey responses

Parents and carers of 165 of 262 WATCH study participants (63%) completed telephone surveys (Box 2). Ten respondents (6%) strongly agreed and twenty-eight (17%) agreed that antibiotics were always needed for treating acute otitis media; 81 (50%) were undecided about whether antibiotics should always be used (Box 3). Thirty-two people responded to the open-ended question about antibiotic prescribing. The major themes were that antibiotic use should be determined by clinical need ("It depends on the child and if they really, really need antibiotics"), support for general practitioners' decisions ("always take the doctor's advice"), and the view that some general practitioners prescribed antibiotics too often ("some doctors overprescribe, just give out for anything… some doctors are very cautious").

2 Characteristics of the WATCH trial participants and the children whose parents or carers responded to the day 14 survey

Characteristic	Survey participants	All WATCH trial parents and carers*
Total number	165	262
Gender		
Boys	84 (51%)	139 (53%)
Girls	81 (49%)	123 (47%)
Age (years), median (range)	3.8 (1.5–14.2)	3.6 (1.5–17.0)
Trial allocation		
Watchful waiting	86 (52%)	133 (51%)
Antibiotic arm	79 (48%)	129 (49%)
Symptoms†		
Yes	95 (58%)	148 (56%)
No	70 (42%)	114 (44%)

* Source: previously unpublished WATCH trial data provided by Robyn Walsh, the trial manager. † Pain, or (for those under 3 years of age) irritability on day 0. ◆

3 Survey question: "I believe antibiotics should always be used for the treatment of middle ear infection (acute otitis media) in children"

Response option	Responses
All responses	165
Strongly agree	10 (6%)
Agree	28 (17%)
Undecided	81 (50%)
Disagree	44 (27%)
Strongly disagree	2 (1%)

Discussion

For many years, prompt antibiotic treatment was recommended for Aboriginal and Torres Strait Islander children with acute otitis media because of the high burden of disease and its complications, and their lifelong impact for Aboriginal and Torres Strait Islander people.[12] From 2010, treatment guidelines recommended watchful waiting for children in urban communities unless they were at high risk of complications.[13] The 2020 guidelines similarly recommend immediate antibiotics only for children at high risk of complications, including those living in remote communities.[3]

Antibiotic overuse and antibiotic resistance are global problems.[14] Doctors are more likely to prescribe antibiotics when they believe that parents expect them,[5] and parents prefer immediate antibiotics for managing acute otitis media.[6] Understanding the views of parents and carers regarding the management of this common childhood condition is consequently important, particularly those of parents and carers of Aboriginal and Torres Strait Islander children, which have not previously been investigated.

Our study in urban Aboriginal and Torres Strait Islander communities identified concerns about antibiotic prescribing, and that variability in their use for managing acute otitis media in children might reflect the views of doctors more than the expectations of parents and carers. A recent American study similarly found limited use of watchful waiting for managing acute otitis media in children, and that antibiotic prescribing was driven more by clinicians than parents.[15] In a randomised controlled trial, also in the United States, prescribing was not reduced by an educational intervention for moderating the expectations of parents regarding antibiotic therapy for upper respiratory tract infections.[16]

One-half of our survey respondents were undecided as to whether antibiotics should always be used for treatment of middle ear infections in children. The open-ended responses of the parents and carers we surveyed indicated that they understood that antibiotics are primarily indicated for children with acute otitis media at high risk of complications; for example, when there is no improvement during watchful waiting or the child has a history of recurrent acute otitis media. These observations explain why most respondents did not agree that antibiotics are always required.

The nuanced understanding of antibiotics expressed by our interviewees was broadly aligned with recommendations regarding antibiotic use for treating acute otitis media in urban communities, where the risk of complications is relatively low.[3] Interviewees understood the argument for delaying antibiotics in favour of initial watchful waiting, and they were also aware of the side effects of antibiotics and the risks of increasing resistance with overuse. Many were enthusiastic about a watchful waiting approach, some also noting the advantages of obtaining a prescription that could be used later should they decide that antibiotics were needed. This awareness, combined with their more intimate knowledge of their children, enables parents and carers to make informed decisions about treatment.

Clinicians are clearly working with informed parents who are likely to support adherence to treatment guidelines.

The parents and carers we interviewed or surveyed were more knowledgeable about the antibiotic management of acute otitis media than the participants in some other studies. For example, parents in focus groups in a Massachusetts study understood the rationale for reducing antibiotic use for other childhood infections, but expressed concern about a watchful waiting approach for managing acute otitis media.[17] Similarly, fifteen non-Indigenous parents interviewed in Brisbane believed antibiotics were required for acute otitis media,[18] and German parents were unclear about the cause of and recommended treatment for otitis media.[19]

Increasing community knowledge about acute otitis media and its treatment influences the views of parents on its management.[4,20] The knowledge of our participants and their attitudes to management may be related to the frequency of ear disease in Aboriginal and Torres Strait Islander communities,[21] many interviewees describing extensive experience with acute otitis media, sometimes over several generations. The role of health service-based WATCH research officers in informing participants about current treatment recommendations was also noted, consistent with guidelines for research in Aboriginal and Torres Strait Islander communities that highlight knowledge exchange as the foundation of evidence-based health practice.[22] Mutual capacity building by researchers and communities is critical for clinical trial research in Aboriginal and Torres Strait Islander communities.[23]

Understanding acute otitis media and the risks and benefits of treatment options enables parents and carers to be equal participants in decision making about their children's health care. Our study illustrates the importance of partnerships between parents and carers and clinicians for managing acute otitis media in their children, consistent with patient-centred care models recommended for primary health care.[24] In Aboriginal and Torres Strait Islander communities, equal partnership may also support self-determination.[25] Acute otitis media is one of the few conditions for which antibiotics are still regularly overprescribed,[26] and a partnership approach could help change the prescribing practices of physicians.

Limitations

The parents and carers of urban Aboriginal and Torres Strait Islander children who participated in our study are likely to have been influenced by their engagement with the WATCH trial. Although we included interviewees who declined to participate in the trial and others whose children were ineligible, the views expressed may not reflect those of people in other urban Aboriginal and Torres Strait Islander communities or in rural and remote parts of Australia. Further, all but two interviewees were women. Six of the 22 interviews were conducted by telephone, possibly limiting the information provided, but this approach increased study participation. Whatever the findings of the WATCH trial, the value of respectful partnerships for managing acute otitis media in children will remain an important finding of our study.

Conclusions

The parents and carers of Aboriginal and Torres Strait Islander children in urban communities who participated in our study welcomed evidence-based discussions with clinicians about the appropriate management of acute otitis media, and were concerned about unnecessary antibiotic use. Our findings reinforce the importance of respectful partnerships and shared decision-making by parents and carers and clinicians as the foundation for good clinical practice that could reduce antibiotic prescribing for this frequent childhood infection.

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