

with standard management, reporting that they seemed to be a routine case for junior medical staff and had to wait until the end of regular operating lists for treatment.⁴ Medical management of miscarriage has the potential for resolving some of these issues and may have economic implications by freeing surgical resources for other uses.⁵ Randomised studies comparing medical with surgical management are required to evaluate this new method of treatment.

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Severity of inflammation of tympanic membrane as predictor of clinical course of recurrent acute otitis media

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Acute otitis media occasionally has an irregular clinical course in children, who may then benefit from early antibiotic treatment. Prognostic factors are therefore needed to enable clinicians to identify such cases. Recurrence and age between 6 months and 2 years were found to be predictive of an irregular course in acute otitis media,¹ and the severity of inflammation of the tympanic membrane has also been found to be predictive of the clinical course.² In this study we investigated whether there was good agreement between observers on the severity of inflammation of eardrums in children with recurrent acute otitis media and whether the severity of inflammation is predictive of the clinical course of the condition.

Patients, methods, and results

We conducted a randomised, placebo controlled, double blind clinical trial in 121 children aged 6 months to 12 years with recurrent acute otitis media.¹ The general practitioner and the otolaryngologist independently assessed the severity of inflammation of the eardrum by otoscopic examination. Severity of inflammation was classified as grade 1 (hyperaemia at the malleus handle and the annulus of the tympanic membrane, opacification of the eardrum, and light reflex still visible); grade 2 (thickening of the eardrum with complete redness and absence of the light reflex); or grade 3 (bulging or perforated eardrum). To estimate the agreement between the observers each

Number (percentage) of children with irregular clinical course of acute otitis media by age, body temperature, treatment, and severity of inflammation of eardrum as assessed otolaryngologist

	Severity of inflammation		p Value*
	Moderate (grades 1 and 2)	Severe (grade 3)	
Age (years):			
< 2	7/16 (44)	3/8 (38)	0.74
≥ 2	6/46 (13)	3/33 (9)	
Initial body temperature (°C):			
< 38	6/43 (14)	4/27 (15)	0.54
≥ 38	7/19 (37)	2/14 (14)	
Treatment:			
Co-amoxiclav	5/31 (16)	4/25 (16)	0.63
Placebo	8/31 (26)	2/16 (13)	
Total	13/62 (21)	6/41 (15)	

*Mantel-Haenszel test.

tympanic membrane was considered independently, and the results were adjusted for age (< 2 or ≥ 2 years). Agreement was estimated by means of Kendall's τ B estimator (> 0.75 excellent, 0.58-0.75 good, 0.40-0.57 moderate, < 0.40 poor).³

When the clinical course of the condition was considered in each child, if both eardrums were inflamed the higher grade of inflammation was taken as the value for that child. The child's age (< 2 or ≥ 2), the presence of fever at enrolment, and antibiotic treatment were considered as possible confounders. The children were examined again three days later by the general practitioner, and if earache or fever was still present the clinical course of the condition was considered to be irregular. Statistical analysis was done with either the χ^2 test or the Mantel-Haenszel technique.⁴

Five children were excluded from the study because they were not examined by both observers. In 16 of the remaining children only one of their eardrums could be seen by both observers, so that results for 216 eardrums were available. The assessments by the otolaryngologist and general practitioner showed moderate agreement for the children aged under 2 ($\tau=0.57$) and good agreement for the older children ($\tau=0.66$) and for all the children ($\tau=0.64$).

One of the possible confounding factors was not recorded for 13 children, so results for only 103 children were used to analyse the predictive value of the severity of inflammation of the eardrum. The clinical course of the condition was irregular in 13 (21%) of the 62 patients with moderate inflammation and 6 (15%) of the 41 patients with severe inflammation (table). There was no relation between the severity of inflammation and the clinical course of acute otitis media (χ^2 test, $p=0.58$). None of the possible confounding factors masked a relation between severity of inflammation and the clinical course of the condition (table).

Comment

The severity of inflammation of the eardrum did not predict the clinical course of acute otitis media over three days even when the observations were stratified by age, initial temperature, and use of antibiotics. We conclude that the appearance of the tympanic membrane does not help in predicting the clinical course of acute otitis media or in making a decision on its medical management.

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