

ABSTRACTS

OME - SEQUALAE, TREATMENT AND INFORMATION NEEDS

Professor Mark Haggard and Josie Higson

Evidence-based medicine (EBM) is one important meeting point for purchasers and providers in the push to ensure cost-effective practice. Evidence of effectiveness of particular management options ensures that limited resources are put to best use. EBM is beginning to pervade the health care system; in order to avoid marginalisation and the instabilities of consumerism, it should be welcomed also by paediatric audiology.

However, much of the needed evidence is absent. Specific areas of importance for OME research include effectiveness of current treatments, risk factors for persistence and the nature and magnitude of developmental sequelae. TARGET (the British trial of alternative regimes for glue ear treatment) addresses the first of these areas of importance by randomising 500 children to one of three treatment options: grommet insertion with or without adenoidectomy and medical management. TARGET aims to show which children show material benefit (in relation to precisely quantified service costs) and whether audiometric changes are adequate surrogates for changes in behaviour and quality of life. We are not convinced that a similar study would be feasible using cognitive and educational outcomes. In a different study of cognitive sequelae in 5-7 year old children with and without OME histories, a small but significant sequelae effect was found on tests of phonological and abstract reasoning which were culture-fair. Over all tests there was a synergy; histories had more impact in those with lower socioeconomic status.

Whilst we wait for trial results on available treatments in OME, there is an interim need for professional information based on evidence to date combined with professional consensus from leading researchers in the field. The Institute of Hearing Research has produced an educational video to meet this need for primary care health care workers. Delegates at the BACDA study day provided feedback on its possible applicability with other groups by completing a short evaluation questionnaire. A brief preliminary evaluation from 163 respondents is summarised here. We wish to thank participants at the BACDA conference for their feedback which is continuing to be evaluated and the comments therein addressed.

Seventy-nine percent of the audience had responsibility for training GPs and health visitors and a further 8 % had some responsibility for training other professional groups. Participants were asked to rate how useful they would find the video on a scale with the lower extreme (0) indicating no use at all and the upper extreme (10) indicating that it was hard to imagine anything better. They gave the video

an average rating of 4.6 for their own personal use but judged it to be more useful for trainee community doctors (6.6) and even more useful as a training aid for the groups whom they regularly train (7.0). The latter two distributions of responses were unimodal, with a peak between 7 and 8 whilst the first distribution divided into three groups who found it of little use (mode 0-1), who expressed a midway value for usefulness (mode 4-5) and who found it highly useful (7-8). This trimodal distribution probably reflects differing levels of experience in the audience. When asked what they liked about the video the five most frequently expressed comments were that it was clear in presentation, easy to understand, well produced, well-informed and that the use of the child to demonstrate sequelae effects was successful and helpful. The five most frequently mentioned dislikes were that the video had failed to mention the role of the community paediatric audiology service, concern about whether or not GPs should be doing hearing tests, doubts about accessibility for GPs of equipment for hearing tests, no mention of mixed or sensorineural hearing losses and no mention of hearing aids.

The surprisingly low average evaluation by this group by comparison with that from previous general medical groups probably reflects two factors. Firstly, experienced SCMOs and community paediatricians attending a specialists meeting could reasonably be supposed to possess most of the facts and principles deemed necessary for non-specialists in primary care. Secondly, an omission of description of the role of community audiology services may have generated a disproportionate negative reaction because its implications are professionally threatening.

The oversight of not mentioning the role of the community paediatric audiology service in the video itself is now rectified in the accompanying written material. In concern about GPs doing hearing tests we recognise that Community Doctors (CDs) are concerned that GPs may be offering a poorer service than the one which CDs have sought to develop to a standard of excellence. However, the onus is on the CD community to promote their service and demonstrate that its effectiveness, accessibility and quality justify its cost. GP practices are developing skills in hearing testing, with emphasis on availability and low cost. At the time of production, the RCGP was of the opinion that most practices had audiometers (although this raises many questions), and current primary care journals such as "Fundholding" are constantly publishing correspondence from GPs asking about how to set up audiology services. The video is in line with what is happening and provides guidance and some restraint (e.g. emphasis on training) to

GPs facing a need to develop such services whilst at the same time it gives details of alternative services in the accompanying written material. The issue of sensorineural losses is fully addressed in the written material with examples of checklists to look out for such losses. We received many more favourable comments about the length of the video than unfavourable ones and were very conscious of not compromising the viewability of the video by cramming in too much information. Inevitably therefore some material had to come in written form which it was not possible to submit for evaluation at the conference. However, the video is distributed as a package. Hearing aids for OME are becoming more acceptable and we will mention their use in the next revision of the written material.

**ITE HEARING AIDS:
THEIR ROLE IN CHILDREN WITH OME**
*Elizabeth Midgley, Children's Hearing Assessment
Centre, Bristol Children's Hospital*

Although the literature is still equivocal as to the short and long term effects (if any) of chronic otitis media with effusion (OME) in children, grommet insertion to relieve the hearing loss due to OME remains the most commonly performed operation on children in this country.

There is some evidence that children with hearing loss due to OME may be at a similar (or even greater) disadvantage to children with mild to moderate sensori-neural hearing loss.

Conductive hearing loss responds well to amplification although the use of hearing aids in children with OME is not widespread. In Bristol in 1993 the waiting time for grommets was over one year. We were encouraged to think of ways of reducing this wait. One approach was to offer amplification through hearing aids as an alternative treatment to children with uncomplicated OME.

The child's parents were offered the choice between in-the-ear aids and post-aurals. The choice is very personal but we are convinced that having the option to offer in-the-ear aids helped greatly in the parental acceptance of hearing aids as a treatment, although many now choose post-aurals.

The presentation outlines how we introduced this pilot study, some of the results obtained and plans for the future. Some advantages and disadvantages of in-the-ear aids are also outlined.

This pilot study was not a randomised, controlled trial, but the evidence from objective measures such as aided and unaided thresholds for warble tones and speech, and from subjective reports from teachers, parents and children suggest that hearing aids can be a viable alternative treatment for the hearing loss associated with OME. There does remain concern about the effect of long-term middle ear effusion on the tympanic membrane and middle ear.

In the video we chose to display equipment for testing hearing which would be most robust for use by those with less training. Whilst it may seem that the mentioned tests were a biased sample, with respect to old textbook lists of tests, the Nottingham research and development agenda is free of such arbitrariness; it has been precisely driven by the need for tests with established metric properties suitable for community use.

In taking space to comment on these criticisms in relation to the BACDA audience, a sense of proportion has to be retained; evaluations by GPs have been very favourable and one by health visitors is in progress.

HEARING AIDS AND GLUE EAR
*P.M.Flanagan (FRCS), L.C.Knight (FRCS),
A.Thomas, S.Browning (FRCS), A.Aymat,
M.I.Clayton (FRCS),
Dept. of Otolaryngology and Audiology,
Royal Gwent Hospital, Newport.*

This is an observational study designed to investigate the acceptance and effectiveness of a hearing aid in the management of children with persistent hearing loss due to glue ear.

Otitis media with effusion (OME), is a common condition in childhood and the most frequent complaint and cause for parental concern is that of hearing loss. In up to 40% of children OME becomes a recurrent problem and failure to control the symptoms in this group and the occurrence of complications associated with repetitive surgery is an area of growing concern.

There is no current information available about the general acceptability of a hearing aid as a form of treatment in this group.

In this study children with OME were selected from a specialised paediatric audiology clinic for a trial period with a hearing aid. Eighty five per cent initially accepted the trial. Their mean age was 6.5 years and the duration of use at follow up was six months. Seventy one per cent were entirely satisfied with the aid as a form of treatment; the main reason for disliking it was self-consciousness. A small percentage developed a psychological dependence on the aid, retaining its use after their hearing had returned to normal.

The trial has shown that a hearing aid could be an effective treatment of a select group of children with OME and warrants an in-depth controlled study, and more attention in the current debate about management options for persistent glue ear.

PREVALENCE OF OTITIS MEDIA WITH EFFUSION AMONG CHILDREN IN SPECIAL SCHOOLS
A thesis submitted to the University of Manchester for the Degree of M.Sc. Audiological Medicine 1993
Aung Nyunt, Department of Audiology, Education of the Deaf and Speech Pathology, University of Manchester

The following is a study of point prevalence of otitis media with effusion (OME) among children from special schools compared to the children from a mainstream primary school as control.

The assumption is that the prevalence of OME among children in special schools is higher than among the children from mainstream primary school and, if proved by the study, it is essential to identify these children by incorporating routine OME screening into existing hearing surveillance programmes for special schools.

A pseudo-random sample was taken from a mainstream primary school by choosing one in five children. But there was no real reason to believe that the sample was biased. From the special schools as many children as possible were taken in the samples and are therefore well represented for the special schools.

In the study one hundred and eight children from one mainstream primary school in Hull were tested to identify those with OME by using otoscopy and tympanometry.

Eighty one children from a special school for children with physical handicaps, seventy seven children from a special school for children with moderate learning difficulties and fifty seven from a special school for children with severe learning difficulties were screened for OME.

It was found that the prevalence of otitis media with effusion among children in the special school for severe learning difficulties was significantly higher than those in the mainstream school. However the prevalence in special schools for children with moderate learning difficulties and physical handicaps was not significantly higher.

The study therefore suggests that routine screening for OME is necessary, appropriate and feasible in special schools for severe learning difficulties due not only to their vulnerability to the effects of OME, but also to their higher prevalence than other schools. The study also shows the prevalence of Otitis Media with Effusion in groups of children older than eleven years in different special schools. The study also attempt to look at the predilection of OME on sexes, right or left ears, unilaterality or bilaterality.

The use of Tympanometry in School Entry Screening
Dr. Ruth Owen, SCMO Audiology, Worcester

Tympanometry combined with a modified 25dB PTA sweep has been use in SW Worcestershire as a school entry screen since September 1983. The procedure has not been universally adopted elsewhere because otitis media with effusion is common in the particular age group tested, it is a fluctuating condition and its effects are unpredictable.

Statistics will be presented from a small audit exercise carried out over three separate weeks over a school year demonstrating that more than 10% of children passing PTA but with unsatisfactory tympanometry may go on to require an ENT opinion. The potential overload of the community audiology clinics has not occurred and ENT referrals are not increased but more appropriately selected. It can be shown that establishing persistence of middle ear dysfunction via a series of tympanograms highlights a significant number of children who ultimately develop hearing loss and require ENT surgery.

Margaret Eatough, Educational Services for Hearing Impaired Children, Shrewsbury.

The implications of a conductive hearing loss may well be understood amongst this audience but this is not necessarily so amongst all teachers and especially new teachers in the classroom. If children show problems in learning, teachers need to be made aware that one of the causes might be conductive hearing loss.

The use of Audiometry in School Entry Screening
Dr. Danny Lang

The first part of this presentation will outline literature on school age hearing screening from the 1981 ACSHIP report to recent reports/advice from the BPA and BSA in 1995 with emphasis on British practice and recommended guidelines. Some international practice will be briefly mentioned.

Dr. Danny Lang presents data about structure and process of school age screening in the South West. Dr. Jane Rooth concentrates on more detailed data from Southmead, Bristol.

Dr Jane Rooth, SCMO Audiology, Southmead, Bristol

A short presentation describing the current system of school screening in Southmead, one of the three Health Trusts in Bristol, devised to try and reduce the proportion of children with normal hearing being referred to audiology clinics.

Numbers failing the test were reduced by comprehensive changes to the previous system, which included the introduction of a third screen performed by school nurses. Detailed results of audiograms, tympanograms, and outcomes of clinic visits are now available on a new computer database. School screening failures only represent 3% of all new referrals for Southmead, and only a few of these need active treatment. Our findings raise the question of whether or not we should keep school screening in its present form.

STAFFING of COMMUNITY PAEDIATRIC AUDIOLOGY SERVICES — an IMPENDING CRISIS
Dr. Shirley Gumpel, MB BS MSc. and DR. Janet Lowe MB BS, BSc.

Summary

Details of 'named person' responsible for coordinating the hearing screening programme was sought via a questionnaire to members of the British Association of Community Doctors in Audiology (BACDA) and the British Association of Community Child Health (BACCH).

Replies were received for 147 individuals. Only seven respondents were below the age of 40 years and 46% were 51 years of age or older. The average number of sessions worked per week in audiology was five (full time is 10 sessions), and 38% worked seven or more sessions each week in audiology. SCMOs were the largest group (79%) with day to day clinical responsibility for the service and Consultant Community Paediatricians (CCPs) were the largest group with overall responsibility (84%). Forty nine BACDA members either had or were studying for an MSc in audiological medicine. All had clinical responsibility for the service but only 12% had overall responsibility.

The findings suggest that young doctors are not being recruited to community paediatric audiology services and that SCMOs are the backbone of the present service. As this group of doctors retire the service is likely to face a staffing crisis.

Introduction

The effect of a hearing loss on a child's development can be profound, affecting both the child's speech and language development, and later academic performance. It is accepted that the diagnosis should be made as soon as possible and this is usually addressed by the provision of adequate screening and comprehensive surveillance techniques and procedures^{1,2,3}. This screening and surveillance programme needs to be monitored and its effectiveness audited so that changes can be made as necessary. An audiology service must also include diagnostic clinics where full assessment of a child's hearing can be carried out. This will be needed for children who have failed a screening test or where there is parental or professional concern about a child's hearing. Staff working at these centres must be able to deal with children of all developmental ages, including those with multiple impairments, and with any degree of hearing loss.

The Hall reports^{2,3} suggested that one person in each district should take responsibility for coordinating the hearing screening programme. The third edition (in press, personal communication) recommends that there should be a named person responsible for coordinating and evaluating the

entire audiology service, though it is recognised that a multi-disciplinary steering group may be needed because of the increasing complexity of the task. The aim of this project was to gather data about the 'named person' for audiology services in districts and trusts.

Method

Questionnaires were sent to all 232 members of BACDA, and a shorter questionnaire was sent to all community paediatricians who were members of BACCH. (figures 1A and 1B). The membership of BACDA comprises doctors employed in community child health services working in paediatric audiology. Membership of BACCH is open to all community paediatricians.

The questionnaire to BACDA members was more detailed than that sent to BACCH members and requested information on the age and sex of the respondent, the number of sessions worked per week in audiology, and whether the respondent held any higher qualification in audiology. Both questionnaires asked for the name and position of the person with overall responsibility for the service.

Results

After exclusion of questionnaires with insufficient information for analysis and questionnaires returned by retired members, there were 100 replies to the detailed questionnaires distributed via BACDA, and 89 replies to the shorter questionnaires distributed by BACCH. Forty two of the individuals identified in questionnaires returned by BACCH members were also members of BACDA. There were, therefore, questionnaires relating to 147 of the 232 BACDA members (63%).

Trusts/Districts.

It was not possible to establish exactly how many trusts or districts were covered by the people replying to the questionnaires because this information was often incomplete or not given but at least 146 districts or trusts were represented.

Respondents.

Senior Clinical Medical Officers (SCMOs) formed the largest single group (74%) of respondents. Clinical Medical Officers (CMOs) represented 14%, with smaller numbers of other professionals making up the remaining 12%.

Age and sex of respondents.

Information on age and sex was available for 100 BACDA members; 81% were women and 19% men. Seventy four per cent of both men and women were 46 years of age or older. Fifty one per cent of the women and 26% of the men were 51 years or older, (46% overall). Only seven individuals were identified below the age of 40.

Proportion of working week spent on audiology.

This information was also available for 100 BACDA members. The average number of sessions a week worked in audiology for both men and women was five, (full time taken as 10 sessions). Thirty seven per cent (30) of the women and 42% (8) of the men worked seven or more sessions a week in audiology. Just over a quarter of the total (27%) were working fewer than three sessions a week in audiology.

Clinical responsibility

Information on the person with clinical responsibility for the community paediatric audiology service was available from questionnaires returned by both BACDA and BACCH members and is shown in table 1. SCMOs formed the largest single group (79%); with 11 Consultant Community Paediatricians (CCPs) (7.5%) and six CMOs (4%) also reported as having clinical responsibility. Five other professional groups accounted for the remaining 9.5%. Of the four audiological scientists reported as having clinical responsibility, two worked with SCMOs as did one of the three speech and language therapists who worked as head of service. There were two districts where the respondent could not or did not identify the person with clinical responsibility for the service.

Overall responsibility.

Information on overall responsibility for the service was also available from both sets of questionnaires and is shown in table 2. In 84% of cases a CCP was regarded as having overall responsibility for the community paediatric audiology service. In only six districts or trusts was an SCMO reported as having overall responsibility. Three audiological physicians were identified who had overall responsibility for the service but no audiological scientist was in this position.

Audiological qualifications of BACDA members

An MSc in audiological medicine was held by 34 SCMOs and one CMO. A further 12 SCMOs and two CMOs were in the process of obtaining an MSc. Information on the number of sessions worked each week in audiology was available for 32 of those with an MSc or MSc in progress. Thirty (94%) worked five or more sessions a week in audiology and 84% seven or more sessions. The average number of sessions worked each week in audiology was eight.

All 49 of the doctors with an MSc or MSc in progress had clinical responsibility for the audiology service but they did not usually have overall responsibility. Only six SCMOs (12%) with an MSc had overall responsibility, 37, (76%) were responsible to a CCP and four to an ENT consultant.

Discussion.

At least 146 districts or trusts were represented by this survey with at least one respondent in every county in England and Wales, In Scotland there was a respondent in all but two counties; Borders, and Dumfries and Galloway; and one BACDA member replied from Belfast. The information from England, Scotland and Wales is, therefore, probably more comprehensive than it appears from a return rate of 63% of BACDA members and this survey probably covers a substantial proportion of districts or trusts responsible for community services. Many districts have more than one BACDA member and it is probable that some of these doctors did not return the questionnaire if they knew that the doctor with clinical responsibility for the service locally would do so.

The findings suggest that doctors working in community audiology are an ageing population and that younger doctors are not being recruited to the service. Three quarters of doctors working in audiology identified by this survey were 46 years of age or older and almost half were 51 years or older. Only seven doctors under 40 were identified in the service but it is possible that younger members were less likely to return the questionnaire if they were not clinically responsible for the service. Doctors with an MSc tended to work more sessions a week in audiology than those without.

There were some interesting anomalies when information was received from two sources, i.e. from both BACDA and BACCH members in the same district or trust. In some cases both a CCP and an SCMO regarded themselves as holding clinical responsibility in the same district or trust. The same happened in two cases with audiological scientists and SCMOs. It was clear, however, that in most districts or trusts SCMOs were identified as being clinically responsible for the service with a CCP having overall responsibility. This was also the case for the 49 doctors who either had or were in the process of obtaining an MSc in audiological medicine; These doctors were responsible to CCPs who, on the whole, have only very limited experience of audiology during their training. Six SCMOs were identified who had overall responsibility for the service; They were working as consultants, often holding the budget but without the cachet, financial reward or recognition that the title consultant automatically brings.

The need for the involvement of a doctor in community paediatric audiology services has been questioned. This survey has shown that, although in a few areas other personnel are clinically responsible for audiology services, SCMOs play the central role. Audiology services must provide for all children, including those with developmental problems or multiple impairments. For these children in

particular, considerable emphasis must be placed on child development and developmental issues. Other aspects of the service such as monitoring and evaluation will include audit, teaching, service planning, planning of protocols for all staff and liaison with other professional and managerial personnel at all levels. This represents a large volume of work and needs staff with different skills working in different parts of the service.

The professional background of the 'named person' could be in paediatrics, audiological medicine, ENT surgery or a non-medical discipline. However, we suggest that a community doctor with a higher qualification in audiology, an overall view of audiology and child health surveillance programmes, a thorough understanding of developmental paediatrics and the skills necessary to manage the service would be best able to provide the variety of skills necessary to lead the service. The findings of this survey suggest that at present Senior Clinical Medical Officers are by far the most numerous providers of audiological services for children in the community. These post will disappear over the next few years as regrading of staff working in community paediatrics takes place and, unless there is a concentrated effort to improve recruitment and to introduce a career structure, audiological services for children will face a crisis in the next decade.

Figure 1A	BACDA questionnaire
1	Name and address
2	Age and sex
3	Name and address of Health District
4	Title of Post
5	Number of sessions worked in audiology per week
6	Qualifications
7	Name and Position of person with clinical responsibility for the community paediatric audiology service.
8	Name and position of person with overall

Figure 1B	BACCH questionnaire
1	Name and address of Health District
2	Name and Position of person with clinical responsibility for community paediatric audiology.
3	Qualifications of person named above
4	Name and position of person with overall responsibility for the service.

Table 1

Title of person with clinical responsibility for community paediatric audiology services.

SCMO	116
CCP	11
CMO	6
Audiological Scientist	4
Educational audiologist	3
Speech and language therapist	3
Audiological physician	1
Health Visitor	1
No-one	1
Not given	1
Total	147

Table 2

Title of person with overall responsibility for community paediatric audiology.

CCP	123
ENT surgeon	7
SCMO	6
Audiological physician	3
Other	3
No-one	1
Not given	4
Total	147

References

1. Bamford J and Saunders E, 1991: *Hearing Impairment, auditory perception and language disability*. London: Whurr publishers.
2. Ed Hall DMB, 1989: *Health for all children. A programme for child health surveillance*. Oxford: Oxford University Press.
3. Ed Hall DMB, 1991: *Health for all children*. Second edition. Oxford : Oxford University Press

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Address for correspondence:

Dr. Shirley Gumpel
43 Belsize Road, London NW6 4RX
Tel. 0171 722 5680
Fax 0171 725 6251