

Reducing the expense of ear wax

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Abstract

Ear wax is one of the commonest presenting complaints both in Ear Nose and Throat surgery and in General Practice. The commonest treatment by far given for this condition is Arachis oil (Cerumol®). Results from various studies however show that this appears not to be the most effective treatment and that cheaper options exist which may drastically reduce the costs incurred by the Health Department in this respect. We hereby outline the advantages of the use of 0.9% saline drops in the treatment of ear wax.

Background

A recent Cochrane systematic review of trials of cerumenolitics concluded that there is no evidence to prefer one particular cerumenolytic to any other, and that water and sodium chloride 0.9% seem to be as effective as any proprietary agent.¹

Evidence from in vitro studies has shown that water-based cerumenolitics (e.g. water, sodium chloride) cause moderate disintegration of cerumen after 15 to 30 minutes, and complete disintegration in a few hours. Olive oil and other oil-based products have little or no effect on earwax in vitro.²

One should also note that Arachis oil (Cerumol®) and related substances should not be used in patients with suspected or confirmed nut or soya allergy, especially in the presence of a perforation of the tympanic membrane.³ By comparison, Normal saline (0.9%) is safe to use at any age, including in pregnancy. It has been shown to be more effective than oil-based products in dissolving ear wax and as discussed below, is much cheaper than arachis oil.

Local Expenditure

The Government Pharmaceutical Services (GPS) recorded a consumption of 1684 bottles of Arachis oil ear drops between January 2004 and January 2005, and a consumption of 2026 bottles between 7th November 2004 and 7th November 2005. The cost (as purchased by GPS) is of 75c per 11ml bottle. This means that over the past year, GPS spent a total of Lm 1519.50c on Arachis oil ear drops alone.

It is a well known fact that sea water causes loosening of ear wax, in fact many patients present with impaction of a dislodged wax plug after swimming in early summer. Normal saline (0.9%) is currently available within the hospital in the form of 10cc bottles at a cost (as purchased by GPS) of just 3c4 per bottle. These bottles as shown below may easily be used as droppers by removing the cap and discarded after 5 days.

If one calculates the potential cost if saline were used instead of Arachis oil, the total would be of Lm 68.88c4 per year, hence a total saving of Lm 1450.61c6 per year.

Practical Points

Arachis oil preparations are available locally with a dropper however as shown in the figures below one can see how the saline bottles available from the local General Pharmaceutical Services can also be easily used as droppers.

Keywords

Cerumen, arachis oil, sodium chloride

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Figure 1: Sodium Chloride 0.9% bottles available from the General Pharmaceutical Services in Malta

The plastic saline bottles have a narrow opening closed by a disposable cap designed to allow withdrawal of the contents with a syringe. The bottle may however be easily used directly as a dropper, squeezing gently to release saline drops directly in the ear as shown in the photographs.

Each 11ml bottle of Arachis Oil contains approximately 295 drops of oil, compared to the 190 drops produced from the 10ml saline bottles as calculated by the authors. This difference can be attributed to surface tension and the size of the orifice of the droppers. If however 3 drops are used 3 times daily for five days (typical prescription), a total of just 45 drops are consumed. Following use either bottle should be discarded as they are no longer sterile and have a limited shelf life.

Conclusions

When taken in isolation, prescribing Arachis oil (Cerumol®) for ear wax is a well recognised and effective treatment. When summing up the total cost for the local health service each year however, cheaper and more effective alternatives exist to Arachis



Figure 2: The Sodium Chloride bottles may easily be used directly as droppers to administer the solution directly into the ear canal

oil which could drastically reduce local expenditure. The use of saline drops should therefore be encouraged especially within the National Health Service, not only because of its reduced cost, but also for its cerumenolytic properties.

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