EFFICACY OF HONEY IN THE TREATMENT OF CHRONIC SUPPURATIVE OTITIS MEDIA IN CHILDREN (Pilot Study)

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Abstract. Chronic suppurative otitis media (CSOM) is a recurrent infection of the middle ear characterized by purulent ear discharge and persistent tympanic membrane perforation. In this study, we used honey in cases of recurrent and chronic suppurative otitis media due to its antibacterial, anti-inflammatory, antioxidant, disinfectant, antifungal, and antiviral properties.

Keywords: ear, honey, chronic suppurative otitis media.

Introduction. Honey, due to its anti-inflammatory, antioxidant, and antibacterial properties, has traditionally been used as a therapeutic agent across various fields of medicine: dermatology [1, 3, 14]; dentistry [2, 15]; surgery [3, 4, 16]; burns [5, 17]; treatment of esophageal foreign bodies [6, 18]; in otorhinolaryngology — to reduce pain after tonsillectomy [7, 19]; to treat chronic bacterial rhinosinusitis [8, 20]; following functional endoscopic sinus surgery [2, 9]; in chronic infected open mastoid cavities (postoperative conditions) [10]; in the treatment of eczematous otitis externa [7, 11]; and otitis media [12, 13, 20].

The quality of honey varies depending on its origin and composition. Honey may be floral, honeydew, monofloral, or polyfloral [2, 9].

We hypothesized that the anti-inflammatory and antibiotic properties of honey could be utilized in the treatment of recurrent and chronic suppurative otitis media in children.

Materials and Methods. This was a prospective, open-label clinical study conducted from September 2024 to February 2025.

A total of 20 cases were included with written informed consent. Inclusion criteria: children aged 2–18 years with recurrent or chronic suppurative otitis media.

Purulent ear discharge ceased by the second or third day, demonstrating the effectiveness of honey alongside conventional treatment.

On the day of admission, after aural toilet, the ear canal was loosely packed with a narrow sterile gauze turunda soaked with approximately 1 gram of liquid whole Yantak honey. Patients were monitored daily for adverse reactions to Yantak honey. The turunda was changed every day.

Study Results. The average age of the children was 6.7 years (range: 2–18). Fourteen of the 20 patients (75%) were male.

Bacterial cultures were performed for all patients. Sensitivity testing was carried out using the broth dilution method to determine the minimum inhibitory concentrations (MIC) of honey against the isolated microorganisms.

A 50% (w/v) honey solution was prepared in Mueller-Hinton broth (MHB). Honey was gradually mixed with a smaller volume of MHB than the final required volume until completely dissolved, then transferred to a measuring cylinder and brought up to volume. The solution was sterilized by filtration using a 0.22-micron membrane filter. Serial dilutions were prepared from the 50% honey stock solution in MHB and added to the wells of a 96-well microtiter plate (100 µL per well). The plates were incubated under standard conditions at 35°C for 18–24 hours. Quality

control for sensitivity testing was performed using international reference strains: Staphylococcus aureus ATCC29213, Escherichia coli ATCC25922, and Pseudomonas aeruginosa ATCC27853.

In 4 of the 20 patients, ear discharge stopped on day 2, in 7 patients on day 3, and in the remaining 9 children by day 5. No allergic reactions to honey were observed.

Twelve patients had right ear involvement; the rest had left ear involvement.

Conclusion. Due to its antibacterial and anti-inflammatory properties, honey can be considered a potential therapeutic agent in the treatment of recurrent and chronic suppurative otitis media. It can be safely applied without concern for regional resistance profiles.

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