Ototopical neomycin exposure in children with non-intact tympanic membranes

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**Objectives:** Although contraindicated, neomycin ototopical preparations (NOPs) may be administered to children with non-intact tympanic membranes (NITMs), such as tympanostomy tubes (TTs) or TM perforations. The goal of this study was to assess the magnitude of NOP exposure in children with NITMs.

**Study Design:** Retrospective drug utilization study

**Methods:** Medicaid claims data (years 1999 – 2006) from 29 states for children age 0-18 were analyzed to identify new cases of TT placement or TM perforation. Cases were followed for 12 months to determine use of NOPs.

**Results:** Of the 300,510 children with NITMs, NOPs were prescribed in 33,740 (11% NITM). Non-toxic agents (ofloxacin or ciprofloxacin) were used in 45% (Floxin, CiproHC, or Ciprodex). In 25%, NOPs were prescribed at the day of initial NITM diagnosis, 36% and 16.5% within the first 3 or 6 months, respectively. NOP utilization decreased from 23% in cases diagnosed in 1999 to 5% in 2005.

**Conclusions:** A large proportion of children with NITMs receive exposure to agents with potential ototoxicity, despite the availability of safer alternatives. Further study is necessary to determine why NOPs continue to be prescribed in the presence of NITMs and if such exposure is associated with ototoxicity.