Over-the-counter Medication Use in a Community-based Sample of Preschool-age Children

Robin Ni1, Jones K1, Simancas-Pallares MA1, Shrestha P1,2, Karhade DS1, Ginnis J1, Slade GD1, Divans K1,2
1Division of Pediatric and Public Health, Adams School of Dentistry, University of North Carolina at Chapel Hill, Chapel Hill, NC; 2Department of Epidemiology, Gillings School of Global Public Health, University of North Carolina at Chapel Hill

ABSTRACT

Objectives: Over-the-counter medications (OTCM) can be beneficial when used as indicated, but they may be used inappropriately as a substitute for needed dental care. Here, we examine the prevalence, types and correlates of OTCM reported by a community-based sample of preschool-age children who were participants of an epidemiologic study of early childhood oral health.

Methods: We used questionnaire and examination information obtained from 8,059 preschool-age children (mean age=53 months) enrolled in Head Start centers in North Carolina and participating in the ZOE 2.0 study. In the questionnaire, parents were asked whether their child had received any OTCM within the last 30 days, and if so, to specify the medication(s). Responses were categorized into common medication groups. Children’s dental caries status was determined by trained and calibrated examiners using International Caries Detection and Assessment System (ICDAS) criteria. Early childhood caries (ECC) was defined as ≥1 tooth surfaces with restored or untreated caries lesions at the threshold of ICDAS≥2. Data were analyzed using descriptive statistics and bivariate (chi-square) tests of association.

Results: Eighteen percent (n=1,470) of children used OTCM in the preceding 30 days, with 16% (n=1,304) using one or more of the five most frequent groups: analgesics (1%), cold and cough medication (3%), allergy medication (5%), anti-inflammatory (6%), vitamins/supplements (4%). Among those, most children had received one (79%) or two (19%) medications. Non-Hispanic whites were twice as likely (20%) to report receipt of OTCM compared to their African American (13%) and Hispanics (12%) counterparts (P<0.0005). This difference was most pronounced for analgesics and anti-inflammatories. A majority of children had ECC (94%) and one third had untreated caries (36%), although neither condition was meaningfully associated with use of any OTCM groups.

Conclusion: While ECC was highly prevalent in this cohort, there was no evidence of recourse to OTCM to manage it.

Supported by: NIH/NIDCR U01DE025046 and a Travel Grant from the Office of Undergraduate Research UNC -CH

Introduction

● Over-the-counter medications (OTCM) are easily accessible and effective, but they may be used inappropriately as a substitute for necessary dental treatment.

● Dental disease can cause pain which is often treated using OTCM. The risk of overdose is low, but can result in severe or fatal side effects.1

○ Between 2002-2012, >600,000 reported cases of out-of-hospital medication errors.2

● Here, we examine the prevalence, types and correlates of OTCM reported by a community-based sample of preschool-age children.

○ We specifically examined types of OTCM and well as use by race/ethnicity, and association with early childhood caries (ECC).

Materials & Methods

Objectives

8,059 preschool-age children (mean age=53 months) enrolled in Head Start centers across North Carolina participating in the ZOE 2.0 study.1, 6,404 of those had clinical examinations.2

ECC status was defined using ICDAS criteria as ≥1 affected tooth surfaces at the threshold of ICDAS≥2.3

Caregivers reported if the child received any OTCM within 49 days before the examination.4

Medications were categorized into common groups: analgesics, cold & cough, allergy, anti-inflammatory, and supplements.

Data were analyzed using descriptive methods and bivariate (chi-square) tests of association using a P<0.05 statistical significance threshold.

Results

Reported OTCM use according to participants’ race/ethnicity

Race/Ethnicity Participants (n) OTCM users, n (%) American African 3,817 514 (13.5) Hispanic 1,611 195 (12.1)* Non-Hispanic white 1,445 370 (25.6)** More than one (non-Hispanic) 845 175 (20.7) Other (non-Hispanic) 336 50 (14.9)

*P<0.05 after Bonferroni multiple testing correction indicating lower percentage compared to African American and non-Hispanic whites; **P=0.05 after Bonferroni correction, indicating higher percentage compared to all other groups except from this one race

Association of OTCM with ECC & untreated caries prevalence

OTCM receipt ECC, n (%) untreated disease, n (%) None 2,820 (55) 1,860 (36) Any medication 584 (51)* 408 (36) Analgesic 192 (55) 135 (39) Cold & cough 152 (48)* 114 (36) Allergy 144 (50) 100 (35) Anti-inflammatory 139 (56) 88 (35) Supplement 32 (50) 19 (30)

*P<0.05; ** not statistically significant after Bonferroni correction for multiple testing

Conclusions

● Approximately 1 out of 6 children reportedly received an OTCM within the preceding 30 days

● Most frequent medications were analgesics, cold and cough and allergy medications

● While ECC was highly prevalent in this cohort, we found no evidence of recourse to OTCM to manage it

References


#67