

Incidence of Acute Otitis Media in Children with Cleft Palate Correction

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Abstract

- Retrospective data, ICD-10 code screening
- Patients < 1 y/o with unrepaired CP (NP-NR); patients < 1 y/o without CP (NoCP); 9100 patients/cohort
- 6 month outcome for otitis media with effusion (OME)
- CP-R = more likely to develop OME

Introduction

- Otitis media (OM) = inflammation of the middle ear¹
- Otitis media with effusion (OME), acute otitis media (AOM)¹
- Primarily caused by Eustachian tube (ET) dysfunction²
- CP disrupts palatal muscles⁴
 - Impacts ET opening
 - Increased OME, hearing loss rates⁴
 - ET dysfunction may persist after CP-R⁵

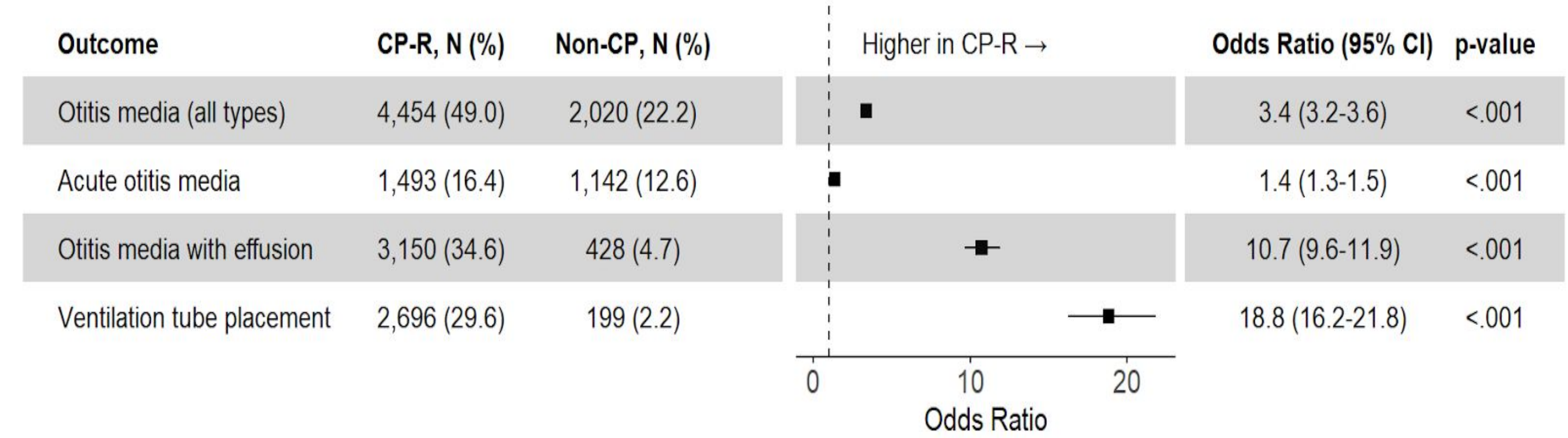
Methods

- TriNetX United States Collaborative Network
- Retrospective data
- ~68 hospitals (rural, suburban, urban)
- ICD-10 codes:
 - ICD-10 H65, H66, H67 = OM
 - ICD-10 H65.0, H65.1, H66.0 = AOM
 - ICD-10 H65.2, H65.3, H65.4, H65.9 = OME
- 1:1 propensity score matched

Table 1: Demographics after propensity score matching.

	After 1:1 Propensity Score Matching			
Demographic	CP-R	Non-CP	SMD	p value
Total Number of Patients	9,100	9,100	--	--
Age at Index, mean ± SD	5.4 ± 5.0	5.4 ± 5.0	<0.001	0.971
Sex, N (%)				
Female	4,238 (46.6)	4,238 (46.6)	<0.001	1
Male	4,850 (53.3)	4,850 (53.3)	<0.001	1
Unknown Sex	12 (0.1)	12 (0.1)	<0.001	1
Race, N (%)				
American Indian or Alaska Native	39 (0.4)	41 (0.5)	0.003	0.823
Asian	895 (9.8)	895 (9.8)	<0.001	1
Black or African American	705 (7.7)	703 (7.7)	<0.001	0.956
Native Hawaiian or Other Pacific Islander	127 (1.4)	127 (1.4)	<0.001	1
White	5,554 (61.0)	5,554 (61.0)	<0.001	1
Other Race	737 (8.1)	737 (8.1)	<0.001	1
Unknown Race	1,043 (11.5)	1,043 (11.5)	<0.001	1
Ethnicity, N (%)				
Hispanic or Latino	1,752 (19.3)	1,754 (19.3)	<0.001	0.97
Not Hispanic or Latino	6,070 (66.7)	6,068 (66.7)	<0.001	0.975
Unknown Ethnicity	1,278 (14.0)	1,278 (14.0)	<0.001	1

Figure 1: Odds Ratios of outcomes in 6 months for CP-R and Non-CP cohorts.



Results

- Increased risk of AOM in the CP-R group (OR=1.4, 95% CI=1.3–1.5, p<0.001)
- CP-R group is more likely to experience:
 - OME (OR=10.7, 95% CI=9.6-11.9, p<.001)
 - Ventilation tube placement (OR=18.8, 95% CI=16.2-21.8, p<.001)

Discussion

- CP-R group = higher rates of AOM, OME, and ventilation tube placement
- CP patients at higher risk of AOM vs. non-CP peers - persistent Eustachian tube, tensor/levator veli palatini muscle dyfunction⁵
- **OME:** Strong association with CP; cleft width significant in prior studies^{5,6}

Conclusion

- CP-R: Higher OME recurrence than non-CP, as expected
- Higher rate of AOM
- Mitigate by controlling other risk factors?
- Early multidisciplinary involvement to reduce long-term sequelae

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