PREVALENCE OF HEARING LOSS IN PEDIATRIC PATIENTS WITH SICKLE CELL DISEASE: A RETROSPECTIVE COHORT STUDY

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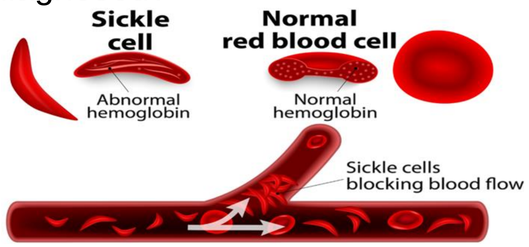
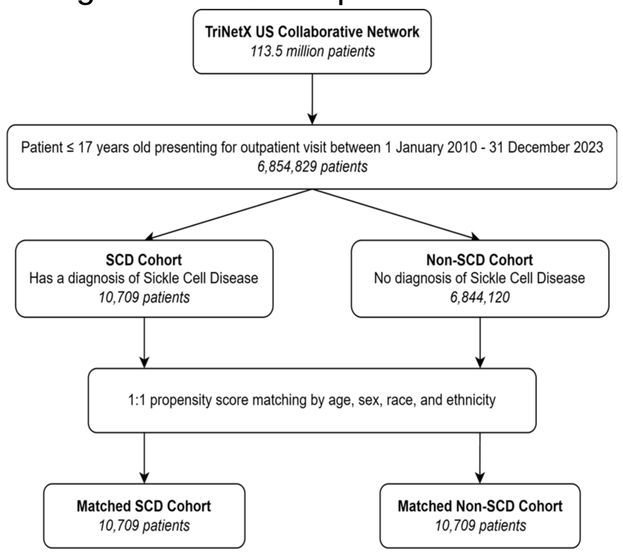
Introduction

- Sickle cell disease (SCD) is a genetic blood disorder
- Affects about 100,000 people in the US
- Red blood cells take on a sickle shape blocking blood flow
- Vaso-occlusions lead to ischemia and end organ damage
- Reduce life expectancy in 20 yrs.
- How often do children with SCD have hearing loss or other ENT disorders diagnosed?



Methods

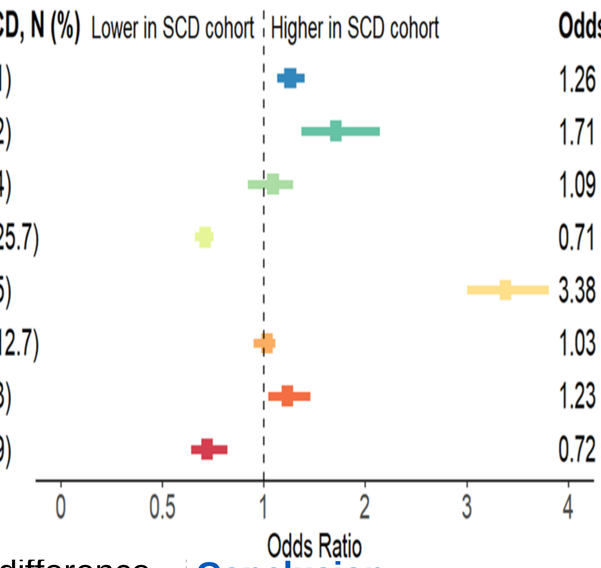
- This study used data from the TriNetX network
- Data collected on June 3, 2024
- Patients ≤17 yr. with outpatient visits between Jan and Dec 2023
- Split into two groups SCD and non-SCD
- Data matched based on age, sex, race, and ethnicity
- Compared frequency of ENT issues
- Data analysis was performed using TriNetX tools, with statistical significance set at p<0.05



Results

- Unspecified hearing loss was significantly more common in the SCD group (7.6%, N=815) compared to the non-SCD group (6.1%, N=657), with an odds ratio of 1.26 (95% CI: 1.13-1.40, p<.001)
- Sensorineural hearing loss was also more frequent in the SCD group (2.0%, N=214) than in the non-SCD group (1.2%, N=126), with an odds ratio of 1.71 (95% CI: 1.37-2.14, p<.001)

Outcome	SCD, N (%)	Non-SCD, N (%)	Odds Ratio (95% CI)	p-value
Hearing loss (all types)	815 (7.6)	657 (6.1)	1.26 (1.13-1.40)	<.001
Sensorineural hearing loss	214 (2.0)	126 (1.2)	1.71 (1.37-2.14)	<.001
Conductive hearing loss	279 (2.6)	257 (2.4)	1.09 (0.92-1.29)	.336
Otitis media	2,099 (19.6)	2,749 (25.7)	0.71 (0.66-0.75)	<.001
Obstructive sleep apnea	1,166 (10.9)	374 (3.5)	3.38 (3.00-3.81)	<.001
Allergic rhinitis	1,398 (13.1)	1,365 (12.7)	1.03 (0.95-1.11)	.501
Acute tonsillitis	297 (2.8)	243 (2.3)	1.23 (1.04-1.46)	.019
Acute or chronic sinusitis	466 (4.4)	635 (5.9)	0.72 (0.64-0.82)	<.001



- There was no significant difference in the rates of conductive hearing loss between the two groups (p=.336)

Discussion

- SCD patients are prone to silent cerebral infarcts and cerebral aneurysms due to sickle cell crisis
- This could similarly compromise blood flow to the cochlea, leading to progressive hearing loss
- With improvements in treatment and life expectancy, regular hearing assessments for SCD patients may help detect and manage complications earlier

Conclusion

- Our study underscores the significant ENT complications in **children with sickle cell disease** (SCD), including a **higher risk** of **sensorineural hearing loss** and **increased incidence** of **recurrent otitis media** and **obstructive sleep apnea**
- These findings highlight the importance of routine ENT evaluations in SCD patients to ensure early detection and management, which can greatly improve their quality of life

References