Meniere’s Disease: Importance Of Socioeconomic And Environmental Factors

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Abstract

**Study Objectives:**
Describe the prevalence of Meniere’s disease in the US and recognize patient and environmental factors in Meniere’s disease.

**Methods:**
Discharge data from the Nationwide Inpatient Sample, the largest US all-payer inpatient care database was analyzed for Meniere’s disease between 2008-2010 in patients > 10 years old. Patient characteristics including prevalence, age, sex, race, household income, and geographic location were studied to determine any correlation with disease prevalence.

**Results:**
Meniere’s prevalence in the US population was 73 per 100,000. Prevalence was highest in Caucasians 91 per 100,000. Prevalence increased as age increases. Meniere’s prevalence increased with household income.

**Conclusions:**
Environmental factors, race and ethnicity, gender and age appear to be important factors in the prevalence of Meniere’s disease.

Introduction

To date, the impact and role socioeconomic factors play in Meniere’s disease (MD) studies is unclear and has not been fully explored. A recent study showed the prevalence of Meniere Disease in the United States to be 190 per 100,000 but its relationship to socioeconomic factors was not investigated. Using a national database, socioeconomic factors in Meniere’s disease are explored in the United States.

Methods and Materials

Using the International Classification of Disease, 9th Revision (ICD-9) codes, patients with a diagnosis of Meniere’s disease were identified from the discharge data from the Nationwide Inpatient Sample (NIS) between 2008 through 2010. Demographic characteristics (age, sex, race, household income, and geographic location) were analyzed and statistical analysis was conducted to determine if there was any correlation between these factors and disease prevalence.

Results

- The prevalence of MD was 73 per 100,000 in patients 10 and older (Table 1), with a predominance in female, Caucasians (Graph 4)
- The prevalence increased with age (Graph 1) and household income (Graph 3)
- The Midwest region had a significantly higher prevalence (94 per 100,000) than any other regions (Graph 2).
- MD was more common in less populated areas and its prevalence decreased as the population’s size increased

![Graph 1. Prevalence of Meniere based on age group.](image)

**Graph 2. Prevalence of Meniere by regions and locations.**

![Graph 3. Prevalence of Meniere by household income.](image)

**Graph 4. Prevalence of Meniere by gender and race.**

Discussion

- Our study, despite its very large sample size, lacks ambulatory data; hence, our prevalence may not reflect the true prevalence but does provide accurate data regarding the factors that do define prevalence.
- As expected, an increase in prevalence with age was seen although we provide novel information demonstrating the prevalence to continue into the 90’s. This increase with age is supportive of the degenerative dysregulation hypothesis and warrant further investigation.
- Novel evidence of a greater prevalence in rural areas and a prevalence that decreased as the population increased was demonstrated suggesting environmental factors.
- Significant increases in prevalence were seen with income independent of health insurance status. Although others have found suggestive correlations with income, our findings substantiate and greatly extend their findings.
- Novel evidence of significant differences between self-designated race and ethnicity were found independent of income, suggesting an underlying genetic component.

Conclusions

Race, gender, age, income appear to be important factors in the prevalence of Meniere’s disease. A greater prevalence of Meniere’s is more likely to be found in elderly, female, Caucasians, high income earners, less populated or rural areas.

![Reference](image)

**References**