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Trends of MENIER'S Disease In Ghana

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ABSTRACT
Fifty-nine (59) patients with Menier's disease confirmed according to defined criteria were selected from the sample of one hundred and ninety-eight (198) consecutive patients with the referral diagnosis of Meniere's disease seen at the Komfo Anokye Teaching Hospital (KATH) in Kumasi between the period of January 2001 to January 2011. This represents an incidence of 0.32% of the total of eighteen thousand two hundred (18,200) new clinic evaluations for all the ENT diseases during the ten year period under the review.
Meniere's disease is surely not uncommon in our subregion, the high success rate encountered after conservative treatment in our study shows that it may have a better prognosis among negroes. Because the sensorineural hearing loss stabilizes in most cases after the first 2-3 attacks during the 3 months period in which treatment is received, subsequent investigations, especially if done by a new researcher, will not find the existence of the trial of symptoms necessary for the diagnosis of the disease. Only eleven (11) of our patients continued to have vertiginous attacks with a progressive sensorineural hearing loss and disturbing tinnitus. We could find any statistical evidence for smoking and alcohol as possible aetiological factors. There was gender balance in the distribution of the disease.
Key Words: Meniere's Disease, Tinnitus, Delayed Endolymphatic Hydrops.

INTRODUCTION

In 1861, Prosper Meniere described a trial of the symptom complex of episodic vertigo, fluctuating but progressive sensorineural hearing loss and tinnitus. His description was so remarkably lucid and accurate that even up till today nothing has been added nor deducted from it. This coupled with his logical deduction and hypothesis that the cause of the disease resided in the inner ear earned for him the eponym Menier's Disease. Thus the trial of symptoms as described by Meniere remains the prima facie hallmark for the diagnosis of the disease. Though the aetiology of Meniere's disease remains obscure, endolymphatic hydrops is accepted as the histopathological correlate to Meniere's disease of the idiopathic type. Presently, Meniere's disease and a disorder known as delayed endolympathic hydrops have been described to have similar, if not identical causes and pathophysiological mechanisms. The increasing number of individuals in the developed countries who exhibit the inability to withstand stress are supposedly the victims of Meniere's disease.
Stress is, therefore, recognized as a predisposing and precipitating factor. On the other hand, there is considerable evidence that prior trauma and prior inflammatory insult to the labyrinth are the causes of delayed endolymphatic hydrops.
While as Gibson[1] 1979 found Meniere's disease to be exceptionally rare in Negroes. Aschroft[2]
et al in 1967 were unable to find a single native sufferer in Jamaica. This study was prompted by a recent publication by Black and Gibson[1] 1982 who reported 2 cases of Meniere's disease in a West African and a West Indian both residing in London.
According to the authors they were unaware of any report in the English literature describing Meniere's disease in these racial groups at the time of their publication.

PATIENTS AND METHODS

The material for this study comprised fifty-nine (59) patients with Meniere's disease, selected from the total sample of one hundred and ninety-eight (198) consecutive patients with the referral diagnosis of Meniere's disease seen at the ENT Unit of Komfo Anokye Teaching Hospital (KATH) in Kumasi between the period of January 2001 to January 2011.
The catchment area comprised of a homogeneous black population residing in the Northern, Brong Ahafo and Ashanti regions of Ghana. The criteria on which the diagnosis was made were the following:

a) The triad of symptoms:- Vertigo, Tinnitus and Sensorineural hearing loss confirmed by an audiological examination.

b) The caloric test and the Short Increment Sensitivity Index (SIS) positive recruitment were used to strengthen the diagnosis.
c) Audiometric profile:- all the 59 patients were submitted to an audiometric profile including a pure tone audiometry and a recruitment test.
d) Nystagmus:- spontaneous, positional, or provocative nystagmus was recorded using the Frenzl's spectacles.

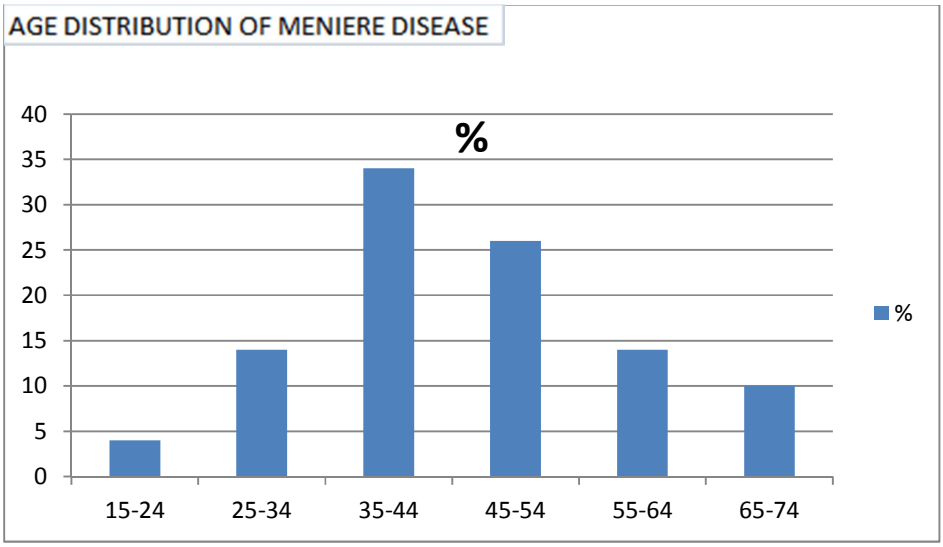
The age, sex, duration and frequency of the illness were recorded. All except nine (9) patients who refused admission were submitted to the caloric test.
Radiographs of the mastoids and the temporal bone using the Shuller and Stenvers technique were done on thirty-four (34) patients depending on the availability of X'ray films. All patients were treated with our medical regimen as shown in Table 1.

Table 1: **Medical Regimen Used at KATH**

	Dosage
1. Long term oral diuretics	Eg. Frusemide 40mg dly x 14 then 20mg dly x 14
2. Antiemetics	Cinnarizine 15.30mg tds x 14 Prochloperazine inj. 1ml 25mg Stat. then tab. 5mg tds x14
3. Peripheral vasodilators	e.g. Cinnarizine 75mg tds x 14 Nicotinic acid 100mg tds x 14
4. Salt restriction	Strict monitoring
5. Curtail the use of tobacco and alcohol	Strict monitoring
6. Sedation	e.g. Tab. Diazepam 10mg nocte x 14

RESULTS

Fifty-nine (59) patients with a confirmed diagnosis of Meniere's disease according to our criteria were studied. Nine patients refused admission. The caloric test done on the fifty (50) admitted patients was decreased in forty-two i.e 84% of the patients. The SISI test was positive in all the patients except three (3). i.e. 94%. There were 30 females and twenty-nine (29) males between the ages of thirty-one and seventy-four years.
Figure I shows the age distribution of patients with Meniere's disease. The highest incidence was recorded among the age group 35-44 years with thirty-four (34%). Seven (7) out of the fifty-nine patients had a bilateral involvement. Five of them were females and admitted that the disease occurred consecutively and not simultaneously. The audiometric profile did not change significantly in forty-eight (48) patients in whom vertigo was controlled to a large extent with our conservative medical regimen. They did not experience any more attacks after the treatment. Nine out of this group showed a significant improvement in their hearing acuity audiologically documented.
Eleven patients out of the total number of fifty-nine (59) patients suffered a progressive sensorineural hearing loss with intermittent vertiginous attacks, with seven (7) of them complaining bitterly of tinnitus
Table 1:Age Distribution of Menieres Disease



The differential diagnosis of 139 non-Meniere's cases are shown in Table 2.

Table 2: Differential Diagnosis of the 139 Non Meniere's Cases

Case	No. of Cases	Percentage (%)
1. Acute Viral Labyrinthitis	36	26.3
2. Diffuse Bacterial Labyrinthitis	17	12.3
3. Circumscribed Labyrinthitis	29	20.8
4. Acoustic Neurinoma	3	2.2
5. Herpes Zoster Oticus	15	11.0
6. Traumatic Labyrinthitis secondary to Temporal bone fracture	9	6.0
7. Vertebro Vascular Insufficiency	12	8.7
8. Cerumen obturans (wax)	18	13.0
Total	**139**	**100**

DISCUSSION

In spite of the development of more sensitive diagnostic tools for the detection of function of the middle and inner ear, Wilmot[4] 1979, it is our conviction that selective interpretation of anumber of investigations supported by the history and clinical findings is a condition sine qua non for the establishment of the diagnosis. Despite the absence of sophisticated and expensive equipment in our subregion for examinations like the electronystagmography, electrocochleography, brainstem evoked response audiometry, we could safely diagnose fifty-nine (59) cases of Meniere's disease establishing and incidence of 0.32%. This is slightly lowere than Okafor's[5] finding which documents an incidence of 0.4% among Nigerians. It also compares favourably with the 0.5% world wide incidence found by Matsunaga[6] in 1976. Using our criteria for diagnosis we made our diagnosis on the basis of the history and clinical judgment supported by simple buy reliable investigations, like the caloric test, Recruitment, Radiology and Audiometry. The audiometric profile of each patient confirmed a sensorineural hearing loss on the affected ear typical of Meniere's disease. Secondly, the 94% positive SISI test; signifying the presence of recruitment excluded any retrocochlear pathology like acoustic neurinoma. Though we are not unaware of the valuable and reliable stapes

reflex test, this facility has been available to us only quite recently. In the epoch of high technological sophistication, one forgets that Meniere himself described and diagnosed the disease in 1861 without any elaborate diagnostic tool.
In our study, the caloric response was reduced in almost all the patients who submitted themselves to the examination. All these findings leave no doubt that our selected cases satisfy the criteria for the diagnosis of Meniere's disease. Though medical protocols used in the treatment of Meniere's disease are numerous, our regimen recorded an improvement (if not a cure) in 81% of our patients. These patients who have had a follow up from one to nine years never experienced any attacks after 3 months of treatment. Though tinnitus persisted in some of these patients, vertiginous attacks subsided. Indeed in nine (9) cases there was an improvement in the hearing acuity audiologically documented. Though this success rate may seem extra-ordinary, a success rate of an average of 60% as improvement or relief among Caucasians, has been reported[7, 8] . However, the recurrence rate was high in these study groups.
In our study, only the eleven (11) patients with progressive sensorineural hearing loss experienced further attacks. This result indicates that the prognosis of Meniere's disease among negroes is better and thus the stabilization or improvement of the hearing acuity may be used as an index for predicting the outcome of the disease. The age of onset of Meniere's disease in our study in general agrees with the findings of Goldon-Wood[9] and Hay et al[10] as well as Okafor.[5] Most patients acquired their disease before the age of 50 years.
We could not document any female preponderance as reported by Okafor[5] with 61.8%. Our findings were in consonance with Morrison[11] who reported both sexes to be equally affected. However, we observed that the severity and the prognosis among the female patients were worse. Out of the eleven with progressive sensorineural hearing loss, 7 were females. Though higher incidence of bilateral involvement in Meniere's disease had been reported by various authors, in our study only seven (7) out of the 59 patients showed evidence of bilateral involvement. Thirty-two (32) of our patients with a rate of 54%, admitted having been heavy smokers before, while 21 were still smoking when they had their first attack. The remaining 27 maintained that they had never smoked. We could, therefore not find any statistical evidence for smoking as a possible factor in the aetiology of Meniere's disease. All the patients admitted that they were social drinkers but did not take more than 2 bottles of beer on such occasions.
One factor which was predominant and common to the majority of the female patients was constant travel. Most of the females are traders who travel either between Accra and London or along the West Coast. The stress and anxiety associated with such travels are well known and we would like to postulate that stress may be a predisposing factor in their attacks. Indeed three (3) of the patients had their first attack a day after entering Britain. From our observation, there are no specific racial factors involved in the incidence of Meniere's disease. One can safely predict that improved facilities and better documentation coupled with more practicing otologists in the subregion will help to break the myth surrounding this disease among negroes. Our incidence of 0.32% is not substantially different from the incidence reported in other racial groups.

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