Prochlorperazine Versus Cinnarizine In Cases of Vertigo

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Cases of vertigo comprised 1.82% of Ear, Nose & Throat out patient cases. Peripheral lesion as a cause of vertigo was seen in 51.12%. Meniere's disease and Benign Paroxysmal Positional Vertigo (BPPV) were found to be the common causes comprising 21.80% and 15.78% of total cases of vertigo. Central lesion as a cause of vertigo was seen in 48.87% of cases. Vertebro Basilar Insufficiency (VBI) was the commonest cause of central lesion seen in 20.30% of cases. An equal number of cases, selected randomly, underwent treatment with prochlorperazine $\pm$ Head Balance exercises and Cinnarizine $\pm$ Head Balance exercises. At the end of 5 weeks of treatment there was 100% subjective improvement with prochlorperazine group and 97.14% in the group with cinnarizine. Side effects were noted in 34.00% of cases; of these 23.00% were seen in cinnarizine group and 11.00% in prochlorperazine. Drowsiness was the commonest side effect and was statistically more significant with cinnarizine group. Response to the treatment was significantly more in cases with vertigo of peripheral origin as compared with vertigo of central origin.

Introduction

Man is traditionally spoken of as possessing five senses viz. smell, sight, hearing, touch and taste. Yet one's 'sense' of balance may be among our more acute perceptions (Frederic 1973). Also man has developed very sophisticated system by which he maintains perfect equilibrium. Any alteration of this system results in a sense of reeling or rotation either of the subject himself or of the objects around him. This is known as vertigo.

Cases of vertigo makes a sizable group of patients seen in any neuro-otology unit (Wallace and Barber 1983). Despite the prevalence of such disorders, it is well recognized that most clinicians feel despondant when confronted with a patient complaining of vertigo or balance disorder (OMoneoney and Luxon 1997). Much work on vertigo has been conducted world wide on urban subject bhatia and deka, 1985 ; Wells and Yande, 1987; Mishra et al 1994; Bower and Cotton 1995. Unfortunately the same is lacking on rural population which comprisesd 75% popoulation of the indian subcontinent 9 (indian

census, 1991) In addition the availability of various antivertiginous drug has made it difficult for the clinician to select the drug. It is in this very context the present study assumed a significance.

Material and Methods

This study comprising of 133 cases was carried out in the department of Otorhinolaryngology at M.G. Institute of Medical scieences. Sevagram Maharashtra. All the new cases of vertigo presenting to the Out Patient department during the period of nov. 1995 to June 1997, irrespective of age and sex, were included in this study. Cases underwent a detailed clinical history taking with special reference to cochleovestibular symptoms followed by a complete general physical examination with special refernce to Ear, Nose and Throat and relevant systemic examination to preclude or confirm the pre existing diseases like hypertension, anaemia, diabetes and any neuroeological deficit. This was followed with pure tone audiometry, observing for spontaneous and positional nystagnous and bit hermal caloric testing. Cases were classified as peripheral or central vertigo and clinical diagosis was achieved.

Fig. 1 Average percentage of weekly improvement

Treatment and response : a total of 33 cases were excluded from medical line treatment as they specific underlying pathology requiring neurlogical or neurosurgical intervention (Table II). Thus only 100 cases underwent medical treatment. Case were divided equally in four groups having 25 patients each.

Group - I Prochlorperazine : Oral prochlorperazine in the dose of 5mg (2.5 mg in children) thrice daily was administered for 7 days and there after the dosage was tapered to 5 mg (2.5 mg in children) twice a day for 15 days followed by 5 mg (2.5 mg in children) once daily for another 15 days. In case the vertigo reappeared on reduction of the dose then patient was put back on the previous higher dosage. (Wheatly 1973, Reynolds 1989).

Group-II Cinnarizine : Oral cinnarizine in the dose of 25 mg thrice daily as administered for 7 days, thereafter the dosage was tapered to 25 mg twice a day for 15 days followed by 25 mg once daily for another 15 days. In case the vertigo reappears on reduction of the dose then patient was put back on the previous higher dosage. In children within 5 to 12 years of

age half the dose was administered (Wheatley 1973; Reynolds 1989).

Group - III Prochlorperazine with Cawthorne and Cooksey Head and balance exercises : Oral prochlorperazine was administered as specified above along with Cawthorne and Cooksey Head and Balance exercises Dix 1984.

Group - IV cinnarizine with cawthorne and cooksey Head and Balance exercises : oral cinnarizine was administered as specified above along with cawthorne and Cooksey head and balance exercises.

The details of the Head Balance exercises were explained to the patients and in addition handouts written in local language i. e. 'Marathi' and/or 'Hindi' were given to patients for the better understanding and proper compliance. All the cases were followed up at 15 days interval to monitor the response and also to record any side effects due to medications.

Observation

A total of 10,969 new cases attended otorhinolaryngology clinic, out of which 200 cases presented with vertigo balance disorders. Among

Fig. 2 Average percentage of weekly improvement

these, 133 cases completed a detailed clinical and laboratory evaluation as per protocol. Thus vertigo constituted 1.82% of ENT Outdoor cases at our centre.

Age and sex wise distribution : The age of the patients varied from 10 years to 85 years. Vertigo was more commonly seen in the second to fifth decades of life. Peripheral vertigo was more often seen in the

second to fourth decades of life whereas central vertigo was seen more often in the third to fifth decades of life (Table 1). A slight predominance of male was seen over female in the ratio of 1.4:1 and it was same for both peripheral and central causes for vertigo.

Table-I
Age-sex wise distribution (n = 133)

Age in yrs.	Males		Females		Total	
	No.	(%)	No.	(%)	No	(%)
00-10	00	(0.00)	01	(0.75)	01	(0.75)
11-20	08	(6.01)	05	(3.75)	13	(9.77)
21-30	11	(8.27)	10	(7.51)	21	(15.78)
31-40	12	(9.02)	12	(9.02)	24	(18.04)
41-50	18	(13.53)	10	(7.51)	28	(21.05)
51-60	19	(14.28)	12	(9.02)	31	(23.30)
61-70	10	(7.51)	03	(2.25)	13	(9.77)
71-80	00	(0.00)	01	(0.75)	01	(0.75)
81-90	01	(0.75)	00	(0.00)	01	(0.75)
Total	79	(59.39)	54	(40.60)	133	(100)

Table-II
Causes of vertigo (n = 133)

Sr. No.	Cause	No	(%)
I.	PERIPHERAL LESION	68 (51.12)	
A.	Middle ear pathology *	5 (3.75)	
	1. Attico antral disease	2	(1.50)
	2. Acute otitis media	1	(0.75)
	3. Acute suppurative otitis media	1	(0.75)
	4. Active tubotympanic disease	1	(0.75)
B.	Inner ear pathology	54 (40.60)	
	1. meniere's disease	29	(21.80)
	2. B.P.P.V.	21	(15.78)
	3. Labyrinthitis *	01	(0.75)
	4. Perilymph fistula *	01	(0.75)
	5. Labyrinthine concussion	01	(0.75)
	6. I.S.H.L *	01	(0.75)
C.	Vestibular nerve pathology	5 (3.75)	
	1. Vesti bular neuronitis	05	(3.75)
D.	Unclassified	4 (3.00)	
		04	(3.00)
II.	CENTRAL LESION	65 (48.872)	
	1. V.B.I.	27	(20.30)
	2. Cervical vertigo °	14	(10.52)
	3. Hypertension *	07	(5.26)
	4. Post concusional vertigo	06	(4.51)
	5. Acoustic neuroma *	02	(1.50)
	6. Anaema *	02	(1.50)
	7. Wallenberg's syndrome *	01	(0.75)
	8. Unclassified *	06	(4.50)

* These cases were either given specific treatment or referred for neurological inauagement.

Seven cases of these were referred for neurological centre.

Causes of vertigo : Meniere's disease and BPPV were found to be the common causes for peripheral vertigo constituting 21. 80% and 15.78% of cases. VBI was the commonest cause of central vertigo constituting 20.30% of the cases (Table II)

Response to prochlorperazine vs Cinnarizine ± Head and Balance Exercises : At the end of 5 weeks of treatment 100% subjective improvement of symptoms were observed in the group III treated with prochlorperazine and head balance exercises. Improvement of 97.14% of symptoms were seen in the

group IV treated with cinnarizine and head balance exercises; 92.85% improvement was seen in the group I treated with prochlorperazine alone and 81.25% improvement in the group II treated with cinnarizine alone (Table III). Patients with peripheral lesions were observed to have an average improvement of 94.16% whereas patients with central lesions showed an average improvement of 93.33% at the end of the treatment period (Fig 1 & 2). These differences were found to be statistically insignificant (p > 0.05).

Table –III
Showing average percentage of weekly improvement of symptoms (n = 1000)

Groups	Treatment group	Total No. (%)		1 week	2 week	3 week	4 week	5 week
I	Prochlorperazine	25 (25)	n*	25	23	17	15	7
			x	64.5%	80.43%	85.29%	86.6%	92.85%
			SD	26.92	19.88	19.88	22.88	12.19
			n	25	24	21	21	8
II	Cinnarizine	25(25)	x	59.0%	69.79%	78.57%	84.52%	81.25%
			SD	25.90	29.46	24.09	23.01	29.12
III	Prochlorperazine + Exercise	25(25)	n	23	25	19	15	10
			x	80.0%	91.6%	93.42%	96.66%	100%
			SD	22.25	13.82	11.31	8.79	00
			n	25	25	22	18	14
IV	Cinnarizine + exercise	25(25)	x	64.4%	74.0%	79.54%	93.33%	97.14%
			SD	30.56	23.36	21.32	11.11	7.52

(n * = Number of subjects : x = Mean % improvement : SD = standard deviation)

Side effects : It was observed in a total of 34 (34.00%) patients. Of these 23 (23.00%) patients were treated with cinnarizine and 11 (11.00%) patients with pro-chlorperazine. Drowsiness was the most common side effect observed in 25.00% patients; of these 18 (18.00%) patients were treated with cinnarizine and 7 (7.00%) patients were treated with prochlorperazine, a difference which was found to be statistically significant ($p < 0.05$).

Discussion

Treatment and response : In a study comprising of 63 patients with vertigo the efficacies of prochlorperazine and cinnarizine were compared. Prochlorperazine was given in the dose of 5–10 mg thrice daily and cinnarizine was given in the dose of 15–30 mg thrice daily. Comparatively good relief of symptoms was achieved with both drugs without significant differences between them (Wheatley 1973). In our study the efficacies of these two drugs were compared in 100 patients having various cases of vertigo (Table III) Prochlorperazine was given in the dose of 5 mg thrice daily for 1 week, then tapered subsequently over a period of 5 weeks. Cinnarizine was given in the dose of 25mg thrice daily for 1 week and tapered subsequently over a period of 5 weeks. This tapering of drug dosage, we believe, probably allows compensation to take place in patients with vertigo (Mishra et al, 1980).

Both prochlorperazine and cinnarizine were found to have almost the same efficacy in controlling vertiginous attacks. In our study it was observed that maximum response was achieved when either of the above 2 drugs were given in combination with Cawthorne and Cooksey Head and Balance exercises. Head and Balance exercises induce repeatedly occurring minimal vestibular excitation which trains the vestibular readjustment required to maintain balance (Mishra et al 1994).

Side effects of prochlorperazine and cinnarizine in patients with vertigo : In a series of 63 patients with vertigo which were treated with either prochlorperazine or cinnarizine drowsiness was seen in 8% of the patients on cinnarizine and 3% of the patients on prochlorperazine (Wheatley, 1973). In our series drowsiness was complained by 18 (18.00%) patients on cinnarizine and 7 (7.00%) patients on prochlorperazine which was found to be statistically significant ($p < 0.05$). The present study was carried out in a rural based hospital where the population at large do not have easy access to medication. Also it is known that patients develop tolerance to the drug effect specially the side effect like sedation which may be the factors accounting for higher occurrence of side effect like drowsiness in our study. Dryness of mouth was observed in 5 (5.0%) patients treated with cinnarizine and 4(4.00%) patients treated with prochlorperazine, a difference which was statistically

insignificant. None of the cases developed prochlorperazine induced synkinesia or basal ganglion toxicity in this study.

The present study revealed that between prochlorperazine and cinnarizine $\pm$ Head and Balance

exercise the former has significantly better suppression of vertigo and lesser side effect. Thus our study suggests that prochlorperazine is superior to cinnarizine in the treatment of vertigo irrespective of the central or peripheral vertigo.

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