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A comparison of steroids and antivirals in management of cases of bell's palsy

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ABSTRACT:

Background:*Bell's palsy is an abrupt onset of unilateral weakness or paralysis of the face due to acute peripheral facial nerve dysfunction. The present study compared steroids and antivirals in management of cases of bell's palsy.*

Materials & Methods:*56 patients of bell's palsy of both genders were randomly divided into 2 groups. Group I (28) were treated with antiviral acyclovir alone (800 mg/day for 5 days) and group II (28) with prednisolone 60 mg/day for a week then tapered over10 days.*

Results: *Left side was involved in 13 and 12 and right side in 15 and 16 in group I and II respectively, duration of onset was 4.5 days and 3.7 days respectively. Latency was 9.24 and 9.42 at baseline and 9.83 and 9.54 after 6 months, amplitude (mV) at baseline was 1.72 and 1.73 and after 6 months was 1.96 and 1.81, velocity (m/s) at baseline was 29.1 and 30.5 and after 6 months was 43.2 and 39.6, area (mVms) at baseline was 3.65 and 3.52 and after 6 months was 4.06 and 3.75 in group I and II respectively. The difference was significant (P< 0.05).*

Conclusion: *Steroid found to be effective in management of cases of bell's palsy as compared to acyclovir.*

Key words: *Bell's palsy, Steroid, Antivirals*

I. Introduction

The facial nerve plays a crucial role in emotional expression. Impairment of the facial muscles causes considerable functional, psychosocial and aesthetic disturbance to the affected individual.[1]The aetiology of peripheral facial palsy can be infectious, which include herpes zoster, borreliosis (Lyme disease), meningitis, and infection of the middle ear.[2] When there is no identifiable cause of the palsy it is termed "idiopathic" or "Bell's palsy". Bell's palsy is an abruptonset of unilateral weakness or paralysis of the face due to acute peripheral facial nerve dysfunction, with no readily identifiable cause, and with some recovery of function within 6 months.[3]

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Many patients with idiopathic facial nerve palsy recover without intervention; however, up to 30% have poor recovery of facial muscle control and experience facial disfigurement, psychological trauma, and facial pain.[4] Treatment of Bell's palsy is still controversial. Therapy is difficult to evaluate, because as many as two-thirds of patients with Bell's palsy spontaneously recover and achieve nearnormal function. Many patients begin to improve as early as 10 days after the onset, even without treatment. Two main types of pharmacological treatment have been used to improve outcomes from Bell's palsy: steroids and antivirals.[5]The rationale for these treatments is based on the presumed pathophysiology of Bell's palsy, namely inflammation and viral infection. The neuronal inflammation associated with Bell's palsy is thought to be secondary to viral infection.Drug therapy mainly consists of corticosteroids with or without an antiviral (acyclovir). These drugs hasten the recovery and lessen the ultimate degree of dysfunction.[6]The present study compared steroids and antivirals in management of cases of bell's palsy.

II. Materials & Methods

The present study comprised of 56 patients of bell's palsy of both genders. All were enrolled in the study after obtaining their written consent.

Data related to patients such as name, age, gender etc. was recorded. Patients were randomly divided into 2 groups. Group I (28) were treated with antiviral acyclovir alone (800 mg/day for 5 days)and group II (28) with prednisolone 60 mg/day for a week then tapered over10 days. After initial clinical assessment patients were subjected to routine hematological and biochemical examination. Nerve conduction study was done using RMS EMG EP MARK –II under standard conditions. The House-Brackmann scale (HBS) grading system was used o assess the severity of the facial nerve disorder, it has six grades where grade I indicates normal function and grade VI indicates complete paralysis.Results were subjected to statistical analysis. P value less than 0.05 was regarded significant.

III. Results

Table I Distribution of patients

Groups	Group I	Group II
Drug	Acyclovir	Prednisolone
M:F	16:12	14:14

Table I shows that group I had 16 males and 12 females and group II had 14 males and 14 females.

Table II Comparison of parameters

Parameters	Variables	Group I	Group II	P value
Side	Left	13	12	0.14
	Right	15	16	
Duration of onset (in days)		4.5	3.7	0.05
Latency (ms)	Baseline	9.24	9.42	0.02
	After 6 months	9.83	9.54	
Amplitude (mV)	Baseline	1.72	1.73	0.03
	After 6 months	1.96	1.81	
Area (mVms)	Baseline	3.65	3.52	0.02
	After 6 months	4.06	3.75	
Velocity (m/s)	Baseline	29.1	30.5	0.04
	After 6 months	43.2	39.6	

Table II, graph I shows that left side was involved in 13 and 12 and right side in 15 and 16 in group I and II respectively, duration of onset was 4.5 days and 3.7 days respectively. Latency was 9.24 and 9.42 at baseline and 9.83 and 9.54 after 6 months, amplitude (mV) at baseline was 1.72 and 1.73 and after 6 months was 1.96 and 1.81, velocity (m/s) at baseline was 29.1 and 30.5 and after 6 months was 43.2 and 39.6, area (mVms) at baseline was 3.65 and 3.52and after 6 months was 4.06 and 3.75 in group I and II respectively. The difference was significant (P< 0.05).

Graph IComparison of parameters

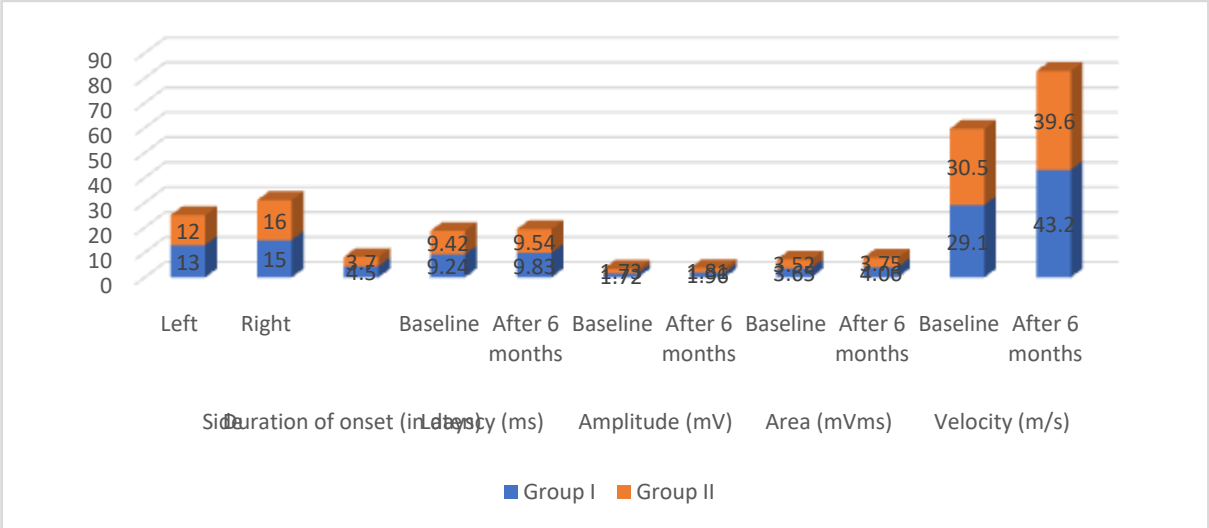
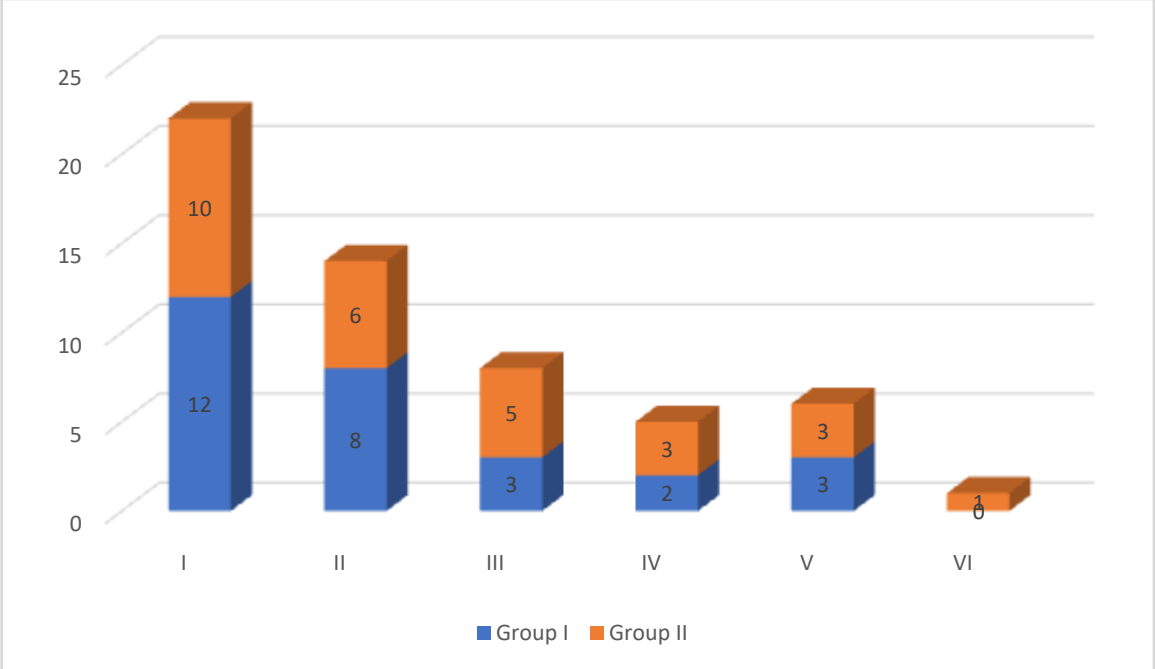


Table III Comparison of House-Brackmann scale

House-Brackmann scale	Group I	Group II	P value
I	12	10	0.04
II	8	6	
III	3	5	
IV	2	3	
V	3	3	
VI	0	1	

Table III, graph II shows that grade I was seen in 12 and 10, II in 8 and 6, III in 3 and 5, IV in 2 and 3, V in 3 and 3 and VI in 0 and 1 in group I and II respectively. The difference was significant (P< 0.05).

Graph IIComparison of House-Brackmann scale



IV. Discussion

Bell's palsy accounts for about 70% of all cases of peripheral facial palsy and the annual incidence is about 30/100 000 population with a peak incidence between the second and fourth decades of life.[7] There is no difference in gender or side of the face, and no seasonal clustering. In most cases, the natural course of Bell's

palsy is favourable but at least 30% of patients will have some sequelae and 4% have severe residual paresis, synkinesis and/or contracture.[8]

Different facial nerve grading scales have been developed and among them the House-Brackmann scale (HBS) is the most commonly used grading system for facial nerve disorders, it has six grades, or scores, where I = normal function and VI = complete paralysis.[9] The present study compared steroids and antivirals in management of cases of bell's palsy.

In present study, group I had 16 males and 12 females and group II had 14 males and 14 females. We found that left side was involved in 13 and 12 and right side in 15 and 16 in group I and II respectively, duration of onset was 4.5 days and 3.7 days respectively. Latency was 9.24 and 9.42 at baseline and 9.83 and 9.54 after 6 months, amplitude (mV) at baseline was 1.72 and 1.73 and after 6 monthswas 1.96 and 1.81, velocity (m/s) at baseline was 29.1 and 30.5 and after 6 months was 43.2and 39.6, area (mVms) at baseline was 3.65and 3.52 and after 6 months was 4.06 and 3.75 in group I and II respectively. Sudhaselviet al[10]included total of 84 patients of bell's palsy. They were divided into four groups of 21 each. Group I patients received steroid alone, group II patients were given acyclovir alone, group III patients had both steroid and acyclovir and group IV patients received only placebo (multivitamins). After the intervention at the end of 6 months we found that majority of the patients had improved from grade III to grade I in group I (steroid only group) compared to other groups and it was followed by group III (acyclovir and steroid) and this difference was found to be statistically significant.

We observed that grade I was seen in 12 and 10, II in 8 and 6, III in 3 and 5, IV in 2 and 3, V in 3 and 3 and VI in 0 and 1 in group I and II respectively. Sethuram et al[11] in their study all the patients with Bell's palsy, without clinical evidence of other cranial nerve damage or central nervous system diseases were included. Patients were divided into 4 groups, control, steroid alone, steroid with acyclovir and acyclovir alone. The study groups of patients were clinically tested in a periodic manner within twelve months at various intervals. The severity of the facial nerve involvement is assessed with House- Brackmann grading (HB) system. In 101 patients, Majority of patients come under grade IV (43.6%) and next comes to grade V (31.7%). 86% of the percentage of patients improved in grade IV, and 68.8% of patients improved in grade V. None of the patients from grade VI showed improvement. Combination of Steroids and acyclovir is definitely useful when compared to the control group. The combination scores over the control group by 1.37 times which is statistically significant.

Adour et al[12]compared the final outcome of 99 Bell's palsy patients treated with either acyclovir-prednisone (53 patients) or placebo-prednisone (46 patients). For patients receiving acyclovir, the dosage was 2,000 mg (400 mg 5 times daily) for 10 days. The outcome in acyclovir-prednisone-treated patients was superior to that in placebo-prednisone-treated patients. Treatment with acyclovir-prednisone was statistically more effective in returning volitional muscle motion and in preventing partial nerve degeneration than placebo-prednisone treatment. The t-tests indicated that the recovery profile and index means were significantly better for the acyclovir-treated group. Authors concluded that acyclovir-prednisone is superior to prednisone alone in treating Bell's palsy patients and suggest that herpes simplex is the probable cause of Bell's palsy.

V. Conclusion

Authors found that steroid found to be effective in management of cases of bell's palsy as compared to acyclovir.

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