ORIGINAL ARTICLE

SPECTRUM OF BELL'S PALSY: AN EXPERIENCE AT DHQ TEACHING HOSPITAL D.I. KHAN, PAKISTAN

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ABSTRACT

Bell's palsy is responsible for about 75% of all cases of acute facial palsy, the incidence of BP varies in different countries around the globe. Bell's palsy is presumed to be immune mediated, probably with an infection as the provoking event. Bell's palsy usually starts with an inability to fully close the mouth and eye on the affected side of the face, subsequently causing difficulties in eating and speaking, later on manifests with corneal drying and erosion. Objective of this study was to collect data on clinical characteristics and to review the treatment results of Bell's Palsy.

METHODS: This cross sectional study was conducted in Neurosurgery department of DHQ Hospital, Gomal Medical College D. I. Khan, from April 2015 to March 2016. All the diagnosed patients of Bell's palsy of either age and sex were included in the study, while patients with associated co-morbid were excluded from the study. All the patients were treated conservatively. The follow up was done at 1 week, 1 month and 2 months post-treatment. A database was compiled using medical records. Data collection included variables, such as age, sex,side of involvement, disease severity by House Brackmann classification and improvement in symptoms at follow-up visits.

RESULTS: Thirty-nine (51.3%), were female. Age ranged from 7-75 years, with mean age of 34.12± 15.97 years. Right side of the face was involved in most of the patients, 46 (60.5%). The duration of symptoms between the appearance of disease and the first visit ranges from 1 – 30 days. Majority of the patients 35 (46.1%) were presented with House Brackmann grade 4 at the time of initial visit. At final follow-up, major bulk of the patients, 57 (75%) were improved having House Brackmann grade 1. We lost 5 patients at final follow up.

CONCLUSION: Bell's palsy is almost equally common in both genders, in middle age group, with dominancy of right face involvement. With optimum conservative treatment most of the patients improved.

KEYWORDS: Bell's Palsy, Treatment, House Brackmann Grade.

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INTRODUCTION

Bell's palsy (BP) is responsible for about 75% of all cases of acute facial palsy, the incidence of BP varies in different countries around the globe. Annual incidence reported to range between 11 - 40 cases per 100,000.[1, 2] In the United Kingdom it is reported that the incidence of Bell's palsy is more than 6 per 100,000 person-years in pediatrics population (under 14 years of age) and estimated to be more than 20 per 100,000 person-years in population aged 15–29 years.[3] In a study which was conducted in emergency units regarding stroke mimics conditions in children[4], BP was the third most frequent diagnosis in children. In adults BP, about 30 % of the patients not receiving treatment, unable to make a complete recovery.[5]

BP can be diagnosed as having different characteristics; Painless, acute, Lower motor neuron (distribution of facial weakness), patient is usually systemically well and the clinical examination is otherwise normal.[6]

Bell's palsy is presumed to be immune mediated, probably with an infection as the provoking event.[7-9]The Bell's palsy usually starts with an inability to fully close the mouth and eye on the affected side of the face, subsequently causing difficulties in eating and speaking, later on manifests with corneal drying and erosion. Finally, the symptomatology can progress to pain around the ear, altered taste, spasms of the facial muscles, impaired lacrimation and noise intolerance.[8]All these result in significant emotional distress during Bell's palsy.[10-13]

There is scarcity of local data in this aspect in our area. So, we conducted this study with the objective to collect data on clinical characteristics and to

review the treatment results of Bell's Palsy. This study will help, not only the local health care providers to properly treat the disease by knowing the outcome, but it will also make a future direction for further studies on BP.

MATERIAL & METHODS

This cross sectional study was conducted in Neurosurgery department of DHQ Hospital, Gomal Medical College D. I. Khan, from April 2015 to March 2016. All the patients were diagnosed on the basis of detailed history, clinical examination and CT scan Brain. All the diagnosed patients of either age and sex were included in the study, while patients with co-morbidities in the form of ischemic heart disease, diabetes and hypertension were excluded from the study. Patients were recruited through consecutive non-probability sampling technique.

All the patients were treated conservatively. The conservative treatment included Deltacortil in tapering dose, artficial tears drops, Methycobalamin TDS, Neurotonic like Ginkobiloba BD and Physiotherapy. All the patients were assessed on the basis of House Brackmann grade (Table I) of facial nerve palsy, at follow up on 1 week, 1 month and 2 months. At final follow up if the patient grade was 3 or above, patient was offered tarsorrhaphy to prevent exposure keratitis. A database was compiled using medical records. Data collection included variables, such as age, sex, side of involvement, disease severity in House Brackmann classification and improvement in symptoms at follow-up visits. Data was analyzed by descriptive statistics, in terms of frequencies, percentages and mean ± standard deviation using Statistical Package for Social Sciences (SPSS) software version 17. The p-value was calculated by chi-square test and statistical significance was defined as $p < 0.05$.

RESULTS

Out of total 76 patients, 37 (48.7%) were male, while 39 (51.3%) were female with male to female ratio of 1:1.05. Ages ranged from 7-75 years, with mean age of 34.12± 15.97 years. Right face was involved in most of the patients, 46 (60.5%), while left side was involved in 30 (39.5%) patients. Duration of symptoms between the appearance of disease and the first visit ranged from 1 – 30 days, with mean of 5.58 ± 6.65 days.

We lost 5 patients at final follow up. Out of 70 patients, who presented at last follow up, 14 (20%) were having House and Brackmann grade of 3 or above (Table 3), so in all these cases tarsorrhaphy was performed to prevent the patient from exposure keratitis. The degree of severity of facial nerve weakness was not associated with gender($p=0.105$).Also the side of the face had no significant relation with the degree of severity of facial nerve weakness ($p = 0.653$).

TABLE 1: HOUSE BRACKMANN FACIAL NERVE GRADING SYSTEM

Grade		Defined By
I	Normal	Normal facial function in all areas.
II	Mild dysfunction	Slight weakness noticeable only on close inspection. At rest: normal symmetry of forehead, ability to close eye with minimal effort and slight asymmetry, ability to move corners of mouth with maximal effort and slight asymmetry. No synkinesis, contracture, or hemifacial spasm.
III	Moderate dysfunction	Obvious, but not disfiguring difference between 2 sides, no functional impairment; noticeable but not severe synkinesis, contracture, and/or hemifacial spasm. At rest: normal symmetry and tone. Motion: slight to no movement of forehead, ability to close eye with maximal effort and obvious asymmetry, ability to move corners of mouth with maximal effort and obvious asymmetry. Patients who have obvious but no disfiguring synkinesis, contracture, and/or hemifacial spasm are grade III regardless of degree of motor activity.
IV	Moderately severe dysfunction	Obvious weakness and/or disfiguring asymmetry. At rest: normal symmetry and tone. Motion: no movement of forehead; inability to close eye completely with maximal effort. Patients with synkinesis, mass action, and/or hemifacial spasm severe enough to interfere with function are grade IV regardless of motor activity.
V	Severe dysfunction	Only barely perceptible motion. At rest: possible asymmetry with droop of corner of mouth and decreased or absence of nasal labial fold. Motion: no movement of forehead, incomplete closure of eye and only slight movement of lid with maximal effort, slight movement of corner of mouth. Synkinesis, contracture, and hemifacial spasm usually absent.
VI	Total paralysis	Loss of tone; asymmetry; no motion; no synkinesis, contracture, or hemifacial spasm.

TABLE 2: HOUSE BRACKMANN GRADE AT INITIAL PRESENTATION

House Brackmann Grade	Frequency	Percentage
2	13	17.1
3	18	23.7
4	35	46.1
5	10	13.2
Total	76	100

TABLE 3: HOUSE BRACKMANN GRADE AT DIFFERENT FOLLOW UPS

House Brackmann Grade	At 1 Week n (%)	At 1 Month n (%)	At 2 Months n (%)
1	19 (25)	51 (67.1)	57 (75)
2	22 (28.9)	11 (14.5)	0 (0)
3	21 (27.6)	10 (13.2)	9 (11.8)
4	12 (15.8)	4 (5.3)	5 (6.6)
5	1 (1.3)	0 (0)	0 (0)
Total	75 (98.7)	76 (100)	71 (93.4)
Missing	1 (1.3)	0 (0)	5 (6.6)

DISCUSSION

In our study females were 51.3% and the peak age of bell's palsy in our study was 4th and 5th decade. When we compare this with literature, the BP is found in large age spectrum but the incidence is found to be high in 15–45 years of age group.[14] Other study mentioned that BP occurs in women, men and pediatric age group, but found to be more prevalent in 15-45 years of age group and in those having diabetes, upper respiratory tract infections, immunocompromised and in pregnancy.[14, 15]

We used House Brackmann grading system for our patients of BP. In the literature all over it is mentioned thatthis grading system is recommended, because of the fact that it is designed to methodicallymeasure facial nerve functional recovery in Bell's palsy, after facial nerve surgery as well as after trauma.[16]

In the current study, almost half of our patients (46.1%) were presented with House Brackmann grade 4 at the time of initial visit. At final follow-up, with the aid of conservative therapy, which includes steroids also, major bulk of the patients (75%) were improved having House Brackmann grade 1. In the literature it is cited that, most of the patients of BP without any treatment show some improvement at follow up of 2-3 weeks and sometimes complete recovery after a period of 3-4 months.[14]

Furthermore, without any form of treatment, function of the facial nerve is restored completely in about 70% of the patients during the period of 6 months. On the other side about 30 % of the patients do not have complete recovery.[17] This is because of the vivid effect of facial palsy on patient appearance, psychological thriving and quality of life, treatment is usually started in an effort to reduce the chances of incomplete recovery.[18]

The positive role of initiation of conservative therapy of BP in the form of steroids and antiviral agents during the first week of disease has a potential benefit and has been discussed by different researchers.[19, 20] Some of the studies also pointed out that 20-31% of the patients not getting proper treatment ends up with potential risk of complications related to facial muscle weakness, that is associated with psycho-social ill being.[21-23] The negative prognostic factors for BP are; absence of recovery from symptoms in first three weeks, age more than 60 years and patient presented with complete palsy initially.[24] This is fact that, we opted for tarsorrhaphy in our patients, who had persistent of symptoms at final follow up, just to prevent them from exposure keratitis.

In the literature it is emphasized that main drug used to treat BP is steroid. The steroids, due to its anti inflammatory response, causes minimization of facial nerve swelling, compression and damage, there by lessening the length of time to and increases the chances of good recovery.[25, 26] Two large RCTs of steroids use in the patients of BP in adults[27,28] reports clinically and statistically significant outcome as compared to placebo.

The role of steroids can not be under emphasized due to the fact that in 2013 the American Academy of Otolaryngology-Head and Neck Surgery Foundation published a clinical practice guideline, which recommends use of steroids within 3 days of initiation of symptoms in adult patients, who are 16 years of age or older.[29]

CONCLUSION

Bell's palsy is almost equally common in both genders, in middle age group, with dominancy of right face involvement. With optimum conservative treatment, including steroids, most of the patients completely recovered in 2 months' time.

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CONFLICT OF INTEREST

None declared.

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NIL

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.