Bell's palsy: data from a study of 70 cases

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Abstract

Bell’s palsy is a condition that affects the facial nerve, which is one of the twelve cranial nerves. Its main function is to control all the muscles of the facial expression. It is a unilateral, acute, partial or complete paralysis of the facial nerve. Bell's palsy remains the most common cause of facial nerve paralysis, more often encountered in females aged 17 to 30 years, recurrent in many cases and with poor associations with other pathologic conditions. In modern literature, the suspected etiology could be due to the reactivation of the latent herpes viral infections in the geniculate ganglia, and their subsequent migration to the facial nerve but, favorable outcome by using vasodilators, neurotrophic and corticosteroid therapy was recorded.

Keywords: Bell's palsy, facial nerve, statistical data

Introduction

Bell’s palsy is a condition that affects the facial nerve, which is one of the twelve cranial nerves. Its main function is to control all the muscles of the facial expression. It is a unilateral, acute, partial or complete paralysis of the facial nerve without other neurologic complains [2]. Bell's palsy is a common but still controversial disease, with unknown etiology until now, which raises important aesthetic and psychological issues because it involves the ability to express emotion by controlling the position of the mouth, nostrils, and eyebrows, and control the eye closure, drooling and speech. Regarding therapy, clinical trials showed a significant benefit from treating Bell’s palsy with corticosteroids [4,5,10,11]. According to the most reliable studies, antivirals have not proved superior to placebo [3]. The surgical treatment is controversial [11], and there are few controlled clinical trials for the effectiveness of physical therapies, massage and facial exercises. In most studies, the incidence oscillates between 11 and 40 cases per 100,000 inhabitants per year [1,6,9]. Even though Bell’s palsy is a common disease, there are few statistical data in the medical literature and lack Romanian data.

Purpose: An attempt to analyze some clinical and epidemiologic aspects of Bell’s palsy, to offer statistic information about this disease, and to develop relevant correlations between the existing data in literature and those obtained in this study.

Materials & Methods

- a sample of 86 patients admitted in “Professor Dr. Dorin Hociota” Institute of Phonoaudiology and Functional ENT Surgery, Bucharest, Romania, between January 2005 and December 2009, were analyzed,
- patients between 17 and 79 years old with idiopathic facial paralysis were included,
- cases with paralysis secondary to trauma, chronic or acute otitis media, otomastoiditis, zoster oticus, cerebral stroke, or other condition affecting the ear and parotid gland were excluded,
- they were divided according to demographic parameters, treatment and related diseases,
- the programs used were the following: Excel 2007 for graphics.

Results

Of the 86 patients admitted, suffering from partial or complete facial paralysis, 70 were diagnosed with idiopathic Bell's palsy, six cases with herpes zoster oticus, four cases with traumatic facial palsy and six patients had chronic or acute otitis media (Fig. 1).
Of the 70 patients with Bell’s palsy, 6 had recurrent facial palsy and three were considered to have Melkerson Rosenthal syndrome. Some authors reported a higher risk for pregnant women to develop idiopathic facial palsy [7,10], but none of our 70 cases of Bell’s palsy was found during pregnancy or puerperium (Fig. 2).

In the study, peripheral facial palsy was more frequent in the warm period (spring and summer) with a peak of incidence in August (Fig. 3), in contrast with the results of other studies in literature, that found a decreasing frequency in warm weather [8].
Regarding the age distribution, the highest incidence was identified between 17 and 29 years old and the lowest incidence between the age of 60 to 69 (Fig. 5). More patients from the urban area have been admitted (Fig. 4).

![Fig. 5 Incidence related to gender and age](image)

32 percent of the patients were admitted within 24 hours from the onset of the symptoms, another 32 percent between the first and the third day, and 26 percent came to the hospital within the first month (Fig. 6).

![Fig. 6 Time of onset](image)

There was a predominance of females and the right side was more frequently affected in the studied population (Fig. 7).

![Fig. 7 Affected face side](image)

Regarding the associated complains: 5 patients accused ipsilateral ear pain, one presented neurosensorial hearing loss to the ipsilateral ear, one had vertigo. Diabetes mellitus and high blood pressure were also found. The patients received treatment mainly with steroids, neurotrophic agents, vasodilatation agents, vitamins B (Fig. 8), with the results shown below, recorded when leaving the hospital (Fig. 9). The best results have been registered when therapy was initiated within three days from the onset, at partial paralysis.
Discussions
Bell's palsy is a common but still controversial disease, with unknown etiology until now. Modern literature showed that up to 80 percent of the patients will recover without treatment [2], however, favorable outcome was recorded by using vasodilators, neurotrophic and corticosteroid therapy and the initiation of steroid treatment within three days from the onset of symptoms increased the chance of complete recovery. Our hope is that this study will help clinicians manage Bell’s palsy and prevent recurrences.

Conclusions
Bell's palsy remains the most common cause of facial nerve paralysis.
Our study found a significant incidence of recurrent facial palsy and, in some cases, an association with ipsilateral otic complaints, facial pain or paraesthesia.
It appears more often in females aged 17 to 30 years old and the right side seems to be affected more often.

References
1. See comment in PubMed Commons below1. De Diego-Sastre JI, Prim-Espada MP, Fernández-García F. The epidemiology of Bell's palsy. Rev Neurol. 2005 Sep; 1-15;41(5):287-90.
2. Tiemstra JD, Khathkate N, Tiemstra JD, Khathkate N. Bell's palsy: diagnosis and management. Am Fam Physician. 2007 Oct 1;76(7):997-1002.
3. Sullivan FM, Swan IR, Donnan PT, Morrison JM, Smith BH et al. Early treatment with prednisolone or acyclovir in Bell's palsy. N Engl J Med. 2007;357(16):1598–607.
4. Ilinczy Sz, Semmelweis E, Altaláns Orvostudományi K, Neuroológia K. Clinical analysis of patients with peripheral facial palsy. Idéggyogy Sz. 2006 Nov 20;59(11-12):400-5.
5. Peitersen E. Bell's palsy: the spontaneous course of 2,500 peripheral facial nerve palsies of different etiologies. Acta Otolaryngol Suppl. 2002(549):4-30.
6. Morris AM, Deeks SL, Hill MD, Midroni G, Goldstein WC, Mazzulli T, Davidson R, Squires SG, Marrie T, McGeer A, Low DE. Annualized incidence and spectrum of illness from an outbreak investigation of Bell's palsy. Neuroepidemiology. 2002 Sep-Oct;21(5):255-61.
7. Valença MM, Valença LP, Lima MC. Idiopathic facial paralysis (Bell's palsy): a study of 180 patients. Arq Neuropsiquiatr. 2001 Sep;59(3-B):733-9.
8. De Diego JI, Prim MP, Madero R, Gavilán J. Seasonal patterns of idiopathic facial paralysis: a 16-year study. Otolaryngol Head Neck Surg. 1999 Feb;120(2):269-71.

9. Tovi F, Hadar T, Sidi J, Sarov I, Sarov B. Epidemiological aspects of idiopathic peripheral facial palsy. Eur J Epidemiol. 1986 Sep;2(3):228-32.

10. Glass GE, Tzafetta K. Bell's palsy: a summary of current evidence and referral algorithm. Fam Pract. 2014 Sep 10; pii: cmu058.

11. Hohman MH, Hadlock TA. Etiology, diagnosis, and management of facial palsy: 2000 patients at a facial nerve center. Laryngoscope. 2014 Jul;124(7):E283-93. doi: 10.1002/lary.24542.