

Bell's Palsy: Current Status



Avinash Shankar^{1*}, Shubham², Amresh Shankar³ and Anuradha Shankar⁴

¹National Institute of Health & Research, India

²Pediatrician, VMMCH and Safdarjang Hospital, India

³Medical Officer, Bihar State Medical Services, India

⁴Centre for Indigenous Medicine & Research, India

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***Corresponding author:** Avinash Shankar, National Institute of Health & Research, Warisaliganj (Nawada) Bihar, India, Email: dravinashshankar@gmail.com

Abstract

Ipsilateral peripheral facial weakness of sudden onset, named after Sir James Bell, though a self recovering disease but presents with hazards like Facial pain, weakness of facial muscle, deviated angle of mouth, synkinesis, crocodile tear and jaw wink etc. It is caused by HSV Common above 70 years age, less common below 10 years, children are commonly affected during winter, 3rd trimester of pregnancy is more susceptible for HSV infection and affect 20 per lakh of population.

Conventional regime constitute Antiviral, steroid and physical therapy but the modified regime constituting Antiviral (Famciclovir), Neurovitamin with Betamethasone, Bioneurogen and active passive exercise improves the therapeutic outcome even in patients with associated risk factor as evidenced in 253 patients who recovered completely within 45 days of therapy without any consequent sequel.

Keywords: Crocodile tears; Jaw winks; Bells palsy; Herpes simplex virus; Perineural fluid; Bio neurogen

Introduction

Bell's palsy, an acute ipsilateral peripheral facial weakness equally affect both sexes, both side of the face and its incidence is 20 people per lakh of population, lowest <10 years age and highest >70 years. Female during 3rd month of pregnancy is more prone as HSV susceptibility is more during the period while children are more susceptible during winter. In life time 1 in 65 persons suffers with Bell's palsy and 7% patient may have recurrence in mean gap of 9-10 years of first episode [1-6].

Normally Bell's palsy start to regain its motor function of its own within 3 weeks but commonly fails to recover completely and presents with sequel like- Chronic loss of taste (Ageusia), Chronic facial spasm, Facial pain, Corneal injury, Synkinesis, Tinitus and gestational sweating. In addition abnormal nerve regeneration may present with-Crocodile tear (Lacrimation of ipsilateral eye during chewing) and jaw winking (Closure of the ipsilateral eye lid on opening the jaw) [7,8].

The medical literature affirm that 33% patient present with incomplete recovery and associated sequel. The commonly used therapeuticconstitutesAntiviral,steroid,neurovitaminandphysical

therapy but fails to achieve complete cure and presents with sequel even after 6 months of therapy [9,10].

Considering the therapeutic efficacy of regime practiced at RA Hospital & Research Centre, Warisaliganj (Nawada) and therapeutic out come of the patients attending during 2014-2016 (Table 1 & 2).

Table 1: Facial weakness is graded as per House Sunny Brook scale.

| Clinical Grade | Characteristics |
|----------------|---|
| I | Normal symmetrical function |
| II | Mild weakness noticeable on close observation Complete eye closure with minimum effort Mild asymmetry of smile with maximal effort Synkinesis barely observed, without contracture or spasm |
| III | Noticeable weakness without disfigurement May not be able to lift eye brow Complete eye closure and strong but asymmetrical mouth movement Obvious, but not disfiguring synkinesis, mass movement or spasm |

| | |
|----|--|
| IV | Obvious disfiguring weakness Inability to lift brow Incomplete eye closure and asymmetry of mouth with maximal effort Severe synkinesis, mass movement, spasm |
| V | Motion barely perceptible Incomplete eye closure, slight movement corner mouth Synkinesis, contracture, and spasm usually absent |
| VI | No movement, loss of tone, no synkinesis, contracture, or spasm |

Table 2: Convenience another grading system been devised.

| Clinical grade | Characteristics |
|----------------|--|
| I | Pain in and behind the ear, mild widened palpebral aperture, un noticed deviation of angle of mouth |
| II | Widely open eye, watering from eye, deposition of food on one side of mouth, Absence of taste sensation, deviation of angle of mouth, retraction of facial muscle |
| III | watering of eye, weakness of facial muscle, facial twitching, absence of taste sensation, Retracted angle of mouth, History of drug therapy without any response . |

Material and Methods

Design of study: Data sheet of Bell's palsy patient treated during 2014-2016 been evaluated to asses the patients history, investigation, therapeutics used and therapeutic outcome (Table 3).

Table 3: On the basis of clinical effect and safety profile, clinical outcome was graded.

| Outcome Grade | Characteristics |
|---------------|---|
| Excellent | Complete reversal of presentation in 1 month without any residue or untoward effects. |
| Good | Complete recovery in 45 days without any residue and any drug adversity. |
| Poor | Relief of presentation in 60 days but no recovery of facial weakness. |

Methods

253 case sheet of Bells palsy patients of varied state of severity been thoroughly evaluated for their clinical presentation, past history, history of therapeutics, biochemical parameters, clinical outcome and safety profile.

Common clinical presentation were:

- A. Pain in or behind the ear.
- B. Numbness and tingling on the affected side.
- C. Weakness of one side of face.
- D. Difficulty in blinking of eye.
- E. Heaviness of face on affected side.
- F. Drooping of face and lips of the affected side.

Therapeutic regieme constitutes:

- A. Antiviral drug (Famciclovir) in therapeutic dose for 7 days,
- B. Neurovitam in (Methyl cobalamine 1500mcg, Pyridoxin and Nicotinamide) intravenous supplementation/in children Syrup constituting Neurovitamins orally.
- C. Bio neurogen, a herbval composit having neuro generative and neuro protective effect constitutes equal part of active extract of Herpestis monnieri, Acorus calamus, Convolvulus pluricaulis, Nardostachys jatamanshi, Celastrus paniculata, administered in dose of 0.5gm orally daily in adult >14 years and children 125-250mg daily orally.
- D. Among steroid Betamethasone 4mg intravenous every 4th day with Neuro vitamins in adults, in children Prednisolon oral in therapeutic dose.
- E. Active and passive exercise.
- F. In very chronic cases with residual sequel like aberrant nerve regeneration or non responsive to therapy Acupuncture is considered a choice.

Each patients were given a follow up card to enter the progressive motor and sensory gain, relief of presenting features or any untoward effects. Patients were duly evaluated for their post therapy Hemato- hepato-renal status to adjudge the safety profile.

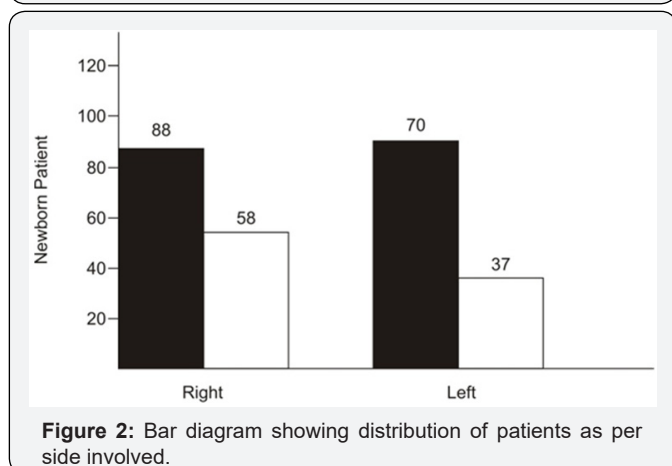
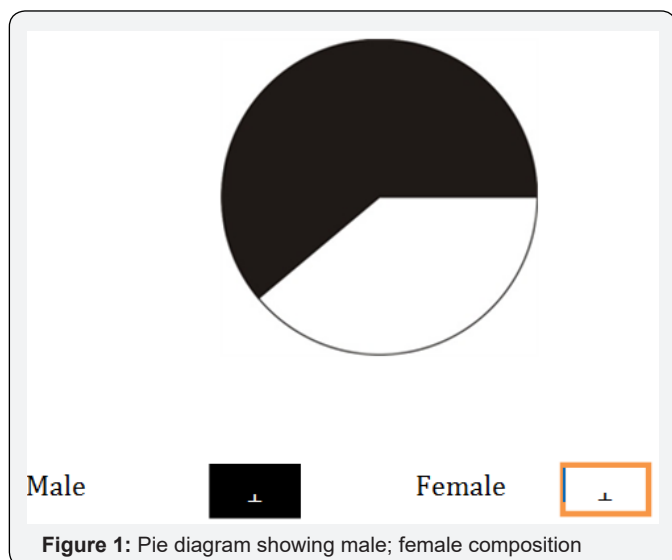
Observations

Patients under study were of age group 5-50 years, though 04(1.6%) were of age <5 years, 23(9%) were of age>50 years and majority 86(34%) were of age group 25-35 years (Table 4).

Table 4: Age and sex wise distribution of patients.

| Age Group (in years) | Number of Patients | | |
|----------------------|--------------------|--------|-------|
| | Male | Female | Total |
| <5 | 02 | 02 | 04 |
| 5 to 10 | 06 | 04 | 10 |
| 10 to 15 | 08 | 06 | 14 |
| 15 to 20 | 12 | 05 | 17 |
| 20 to 25 | 11 | 07 | 18 |
| 25 to 30 | 25 | 15 | 40 |
| 30 to 35 | 28 | 18 | 46 |
| 35 to 40 | 16 | 10 | 26 |
| 40 to 45 | 22 | 14 | 36 |
| 45 to 50 | 12 | 07 | 19 |
| >50 | 16 | 07 | 23 |

Male, female composition is 158:95 (Figure 1) while composition of patients as per side involved 146: 107 (Figure 2).



Out of 253 cases 97 were newly detected cases and 156 were non responsive old cases of Bell's palsy. The lag period in 48(19%) cases was <48hrs while 32(12.6%) cases attended after 17 days of Bell's palsy and were taking treatment from elsewhere without any relief (Table 5).

Table 5: Distribution of patients as per lag period.

| Lag Period (in days) | Number of Patients | | |
|----------------------|--------------------|--------|-------|
| | Male | Female | Total |
| <2 | 28 | 20 | 48 |
| 2 to 5 | 32 | 17 | 49 |
| 5 to 8 | 46 | 22 | 68 |
| 8 to 11 | 24 | 16 | 40 |
| 11 to 14 | 10 | 06 | 16 |
| >14 | 18 | 14 | 32 |

Out of all 123(48%) cases of Bell's palsy were also suffering with associated diseases i.e.- Hypertension(18.6%), Diabetes mellitus(14.2%), Tuberculosis(1.6%), Post vaccination(0.8%), Post diarrhoeal(2.4%) and 29.5% female were with pregnancy of various gestation (78.6% 1st trimester and 14.2% 3rd trimester of pregnancy) (Table 6).

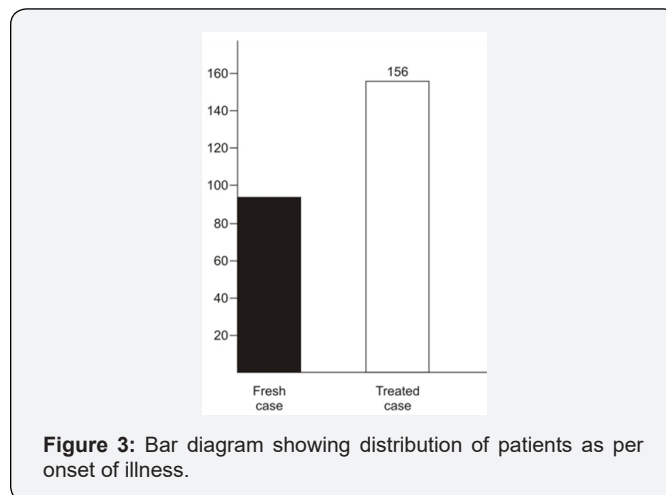
Table 6: Shows distribution of patients as per association of other diseases.

| Associated Clinical Conditions | Number of Patients | | |
|--------------------------------|--------------------|--------|-------|
| | Male | Female | Total |
| Hypertension | 26 | 21 | 47 |
| Diabetes mellitus | 19 | 17 | 36 |
| Pregnancy | | 28 | 28 |
| 1 st trimester | | 22 | |
| 2 nd trimester | | 02 | |
| 3 rd trimester | | 04 | |
| Tuberculosis | 03 | 01 | 02 |
| Post vaccination | 02 | - | 04 |
| Post diarrheal | 04 | 02 | 06 |

All newly detected cases had improvement within 72hrs of therapy and had complete recovery by 21st day without any residue while out of 156 treated cases 150 had complete recovery by 30th day and rest 6 by 45th days of therapy. No patients reported either any diseases related discomfort or therapy related adversity or any alteration of hemato-hepato-renal status.

Discussion

Bell's palsy, a lower motor ipsilateral facial weakness is due to inflammation of facial nerve at the stylomandibular foramen usually caused by Herpes simplex virus (HSV) as evidenced by presence of HSV in endoneural fluid of facial nerve, posses immense ability of self recovery [11], but agonizing presentation due to lower self defense delayed recovery presents with various sequel even after treatment with prevailing regime constituting Antiviral, steroid and physical therapy (Figure 3).



Present study reveals complete recovery without any residue even in cases suffering with other associated diseases like Hypertension, Diabetes mellitus, Pregnancy etc.

The superiority of clinical outcome can be explained as:

- A. Famciclovir a prodrug of Penciclovir promptly check viral growth in newly detected cases due to absence of

cross resistance and convenient dose schedule. It also check neuronal damage.

B. Neurovitamin (Methyl cobalamine, Nicotinamide and Pyridoxin) promote neuro conductioun and prompts faster motor recovery

C. Betamethasone supplement with Neurovitamin alleviate neuronal inflammation and relieve presentation like agonizing pain or muscle cramps, thus promote both motor or sensory recovery.

D. Bio neuroregenerator herbal composite promote neural regeneration and checks aberrant neuro regeneration, thus checks withdrawal or recurrence in future.

E. Active and passive facial exercise potentiate power and tone recovery.

Conclusion

Therapeutic regieme of the study achieved earliest clinical improvement in 48hrs in newly detected cases with lag period of 24-36hrs while patients with lag period of >4 days taken 6 days to show recovery while 92% of treated cases attended the centre after 10 days of onset of illness show recovery after 15 days of therapy [11].

No patients under evaluation revealed any alteration in hemato-hepato renal alteration or drug related effects. All newly detected cases achieved grade I and rest other grade II of therapeutic outcome.

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