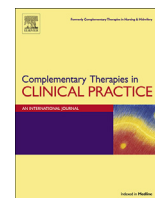




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A close look at an integrative treatment package for Bell's palsy in Korea



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ABSTRACT

Objective: To provide an overview of the integrative treatment package for Bell's palsy provided at Kyung Hee University Korean Medicine Hospital (KHU KMH).

Summary: The Facial Palsy Center at KHU KMH has been providing integrative treatment for Bell's palsy patients during the past three decades. Within 72 h of symptom onset, corticosteroids are recommended but complementary treatment including acupuncture and herbal medicine can be used to help suppress inflammation and nerve degeneration. If patients suffer from postauricular pain, pharmacopuncture and cupping is utilized. During the subacute or chronic periods, different acupuncture types are selected accordingly, and herbal medicine and moxibustion helps to improve immune functions and relieve accessory symptoms. Qigong programs are also provided to help relieve facial tension and paralysis.

Conclusions: Although rigorous research is warranted, with limited treatment options, we highly suggest that it is worth applying integrative medicine to Bell's palsy patients.

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1. Introduction

Bell's palsy is a benign idiopathic peripheral nerve disorder that causes sudden paralysis of unilateral facial muscles. Studies show that 70% of those affected will have complete recovery but the remaining 15% will go on to experience permanent damage and 5% will suffer from severe sequelae [1–3]. Most studies state the incidence rate to range from 11 to 40/100,000 per population [4], but recent studies published in the UK, Italy, and Israel have reported increasing numbers of 37.7 [5], 53.3 [6], and 87 cases per 100,000 [7], respectively. The rise in numbers may simply be nation-to-nation variations due to the climate, the demographic features of the regions, and predisposing diseases [6], but modern day high levels of stress, chronic fatigue leading to lower immune system, and increasing aging population worldwide may also be

major contributors.

For Bell's palsy patients, starting corticosteroids within 72 hours of symptom onset is the only recommended treatment option. Randomized controlled trials conclude that taking 50 mg of prednisone orally within three days of onset for five to ten days can help patients recover faster than the control group, and guidelines from the American Academy of Neurology suggest that side effects due to these corticosteroids are minor and temporary [8–10]. However, for patients predisposed to uncontrolled diabetes, osteoporosis, obesity and previous sensitivity to corticosteroids, the use of prednisone at such high quantities can be a concern. Also, facial disfigurement causes a chain of psychosocial problems. Fu et al. reported that among 103 participants with facial palsy, 32.7 and 31.3% had significant levels of anxiety and depression, and related studies have shown that a patient's psychological adjustment to one's facial disfigurement is a crucial factor to overall recovery [11]. Yet no treatment guidelines are available for the previous or above subset of Bell's palsy patients.

In several Asian countries, traditional medicine has served an integral role in national healthcare. In 1952, South Korea restored Korean Medicine (KM) in education, healthcare, and the legal system. Nationwide, 11 KM colleges with a six year curriculum and a national graduate school with a four year curriculum currently train KM doctors; graduating students are required to pass state-

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administered licensing examinations, and KM doctors are entitled to the same legal status as conventional doctors. From 1987 onward national health insurance has expanded to cover consultation costs, inspection fees, and most KM treatment (acupuncture, moxibustion, cupping, enema, bath, general treatment, and select herbal prescriptions) [12].

Among the KM hospitals, Kyung Hee University Korean Medicine Hospital (KHU KMH) in Seoul, South Korea, was the first university based KM medical center and is a government-designated KM training hospital. To this day, KHU KMH trains KM specialists in eight special departments, and three specialized centers. Inside the Department of Acupuncture and Moxibustion, the facial palsy center, was established based on KM's possibilities to complement conventional medicine with currently no other treatment options except corticosteroids. KHU KMH developed an integrative treatment package to support patients' needs and two qualitative studies have been published to provide an in-depth report of patients' experiences [13,14]. The present report aims to provide an overview of the Bell's palsy treatment program and to share our unique experiences at KHU KMH.

2. Introduction and overview of KHU KMH Facial Palsy Center

Since its establishment in 1971, KM doctors in the Department of Acupuncture and Moxibustion specialized in the treatment of Bell's palsy. The electronic medical recording system was introduced in 2004, and medical records from 2004 to 2010 show an annual average of 662 outpatients and 275 inpatients visiting the hospital for treatment related to facial paralysis. On December 2010, the department proceeded to organize a specialized and improved one-stop treatment center for Bell's palsy and thereafter, records have shown a double increase in patient numbers, averaging 1553 outpatients and 442 inpatients per year (Fig. 1). Currently there are five clinicians and one qigong instructor.

Bell's palsy patients can visit the Facial Palsy Center via two different routes. Outside office hours, many acute patients come through the Emergency Room where a residing physician immediately examines patient symptoms and the clinical history. The initial diagnosis is further verified with neurological examinations and if the patients' symptoms uniformly exhibit signs of peripheral facial nerve palsy, they are then referred to a specialist on-duty for primary conventional treatment. When patients have ambiguous results, further radiological examinations are necessary to confirm diagnosis [15]. After Bell's palsy has been confirmed, patients are introduced to the outpatient clinic. If the patients visit during office hours, they can come directly to the outpatient clinic. The aforementioned procedures are followed and if the time from initial onset has not exceeded 72 hours, corticosteroids are prescribed when applicable. Occasionally, patients have to be referred to several other departments for further analysis because approximately 5–7% of facial palsy can result from other factors such as facial neuroma, cholesteatoma, hemangioma, or meningioma. If the patients' symptoms do not show improvement for more than three weeks, contrast-enhanced computed tomography, or Gadolinium-enhanced magnetic resonance imaging can be ordered to examine specific areas inside the brain and around the internal auditory meatus [16]. After two weeks from onset patients can visit the rehabilitation center to receive evoked facial nerve electromyography (EMG) and electroneurography (ENoG) tests [17,18]. When the eyelids do not close, patients are referred to an ophthalmologist to receive artificial eye drops and ointments to keep the cornea moist and protect it from external damage. Since the facial nerve is located in the vicinity of the acoustic nerve, facial paralysis can accompany hypo- or hyperacusis. If such symptoms interfere with overall health management, patients are referred to the ENT [19].

Fig. 2 illustrates the overall treatment flow for Bell's palsy patients visiting KHU KMH.

3. Integrative treatment package for Bell's palsy according to different stages

The treatment modality, focus, and goal of the integrative treatment package in the inpatient and outpatient clinic are moderated depending on the stage of palsy. The stages are generally divided into four different periods - the acute (within one-week after onset), subacute (within three weeks), recovery (three weeks to six months), and sequelae (after six months). Treatment differences during each stage is based on neural pathophysiological differences and various patient needs. Different types of acupuncture, moxibustion, cupping, and herbs are utilized, focused on reducing inflammation, increasing local circulation, relieving pain, minimizing corticosteroid associated complications, and providing psychological support (Fig. 3).

During the acute period, facial nerve damage is active and ongoing. Although the exact etiology is unknown studies have shown that inflammation of the facial nerve due to herpes virus simplex type 1 may be involved and this leads to edema, compression, ischemia and demyelination of the nerves inside the narrow fallopian canal [20,21]. The symptoms occur within a few hours, deteriorate rapidly, often continuing up to two days [22]. Psychologically, the sudden and rapid deterioration of symptoms traumatize patients affecting future social activities [11,23]. Thus management of Bell's palsy during this period aims to immediately reduce inflammation, slow ongoing nerve degeneration, control complications related to sudden facial paralysis, and to provide psychological support. Integrative treatment alongside corticosteroids is strongly recommended and reducing deterioration is crucial since the severity of facial weakness and paralysis maintained until a week later is a significant prognostic factor for Bell's palsy [24].

During the subacute and recovery period, nerve degeneration is no longer active. Facial muscles start to regain strength but this period can last from a few weeks to several months. The treatment goal is to help nerve regeneration, prevent complications, while reducing possible development of sequelae.

4. Treatment modalities for Bell's palsy

4.1. Acupuncture

Systematic reviews and meta-analysis of the efficacy of acupuncture for Bell's palsy have shown mixed results [25,26]. Yet the latest study, which included fourteen randomized controlled trials with 1541 individuals, has reported a significant association in acupuncture with a higher effective response rate for Bell's palsy [26]. During the acute stage, facial nerve demyelination is active and unstable, meaning unnecessary intensive treatment on the affected side is not recommended. Acupuncture is performed intermittently mostly on points located on the affected side with a few significant points on both limbs (Table 1). For most treatments, *de qi* (sensation of soreness, tingling, fullness, aching, cool, warmth heaviness, and a radiating sensation at and around the acupuncture points) is elicited. Results that we have seen in the clinic after inducing *de qi* are in sync with current study results, where the recovery rate of Bell's palsy patients after six months was 71% in the acupuncture only group and 90% in the acupuncture plus *de qi* group [27]. However, too much stimulation should be avoided.

If the patient has ongoing pain, pharmacopuncture, such as bee venom acupuncture can be used not only to enhance acupuncture stimulation, but also to reduce pain and chronic inflammation. The

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