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FACIAL NEURITIS: MODERN AND INNOVATIVE TREATMENT APPROACHES

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Abstract: Facial neuritis, commonly known as Bell's palsy, remains one of the most frequent peripheral nerve disorders affecting facial expression and quality of life. The standard therapy involves corticosteroids, eye protection, and facial rehabilitation. However, recent years have brought innovative approaches such as stem-cell therapy, extracellular vesicle application, neurostimulation, and pharmacological neuroprotection. This article reviews up-to-date evidence and discusses modern treatment strategies, regenerative medicine advances, and rehabilitation protocols for facial neuritis.

Keywords: Facial neuritis, Bell's palsy, corticosteroids, stem-cell therapy, extracellular vesicles, neuroregeneration, rehabilitation.

Аннотация

Неврит лицевого нерва, также известный как паралич Белла, является одним из наиболее распространённых заболеваний периферической нервной системы, нарушающим мимику и качество жизни пациента. Стандартная терапия включает применение кортикостероидов, защиту глаз и реабилитацию. В последние годы появились инновационные методы лечения — стволовые клетки, экзосомы, нейростимуляция и нейропротекторные препараты. В статье рассмотрены современные данные, регенеративные подходы и новые направления терапии неврита лицевого нерва.

Ключевые слова: неврит лицевого нерва, паралич Белла, кортикостероиды, стволовые клетки, экзосомы, нейрорегенерация, реабилитация.

Facial Neuritis and Its Modern Treatment Perspectives

Facial neuritis is an inflammation or dysfunction of the facial (VII cranial) nerve that leads to partial or complete paralysis of one side of the face. The most frequent form, Bell's palsy, is idiopathic and associated with viral infections, ischemia, or autoimmune mechanisms. Despite spontaneous recovery in many cases, early and appropriate management remains essential to prevent long-term sequelae such as synkinesis or facial asymmetry.

The facial nerve runs a complex anatomical course, making it susceptible to compression or inflammation in its bony canal. Pathogenesis involves nerve swelling, ischemia, and demyelination. The primary goal of therapy is to reduce inflammation, improve blood flow, and stimulate regeneration.

Conventional Treatment Methods

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Corticosteroids remain the gold standard in the treatment of idiopathic facial neuritis. Prednisone or prednisolone is usually prescribed at a daily dose of 50–60 mg for 5–7 days with gradual tapering. Early administration within 72 hours of symptom onset significantly improves recovery rates.

Antiviral drugs such as acyclovir or valacyclovir may be added in cases of suspected viral etiology (herpes simplex or varicella-zoster infection), although their efficacy is still debated.

Eye protection plays a crucial role, as incomplete eyelid closure can lead to keratitis and corneal ulceration. Artificial tears, moisturizing gels, and temporary eyelid taping are commonly recommended.

Rehabilitation is an integral part of treatment. Facial exercises, massage, and mirror therapy help restore muscle symmetry and reduce long-term contractures. Electrostimulation may also enhance neuromuscular recovery.

Recent Innovations in Facial Neuritis Therapy

Recent studies highlight promising advances in regenerative medicine and neuroengineering. Stem-cell therapy has been investigated for its ability to enhance axonal regeneration.

Extracellular vesicles (EVs) derived from mesenchymal stem cells show potential for nerve repair by delivering neurotrophic factors and modulating inflammation. A pilot study in “BMC Neurology (2023)” demonstrated functional improvement in patients receiving combined local and intravenous EV injections.

Pharmacological neuroprotection has also gained attention. Vitamin B12 (mecobalamin), coenzyme Q10, L-carnitine, and nimodipine have shown neuroprotective and regenerative effects in experimental models. Although clinical data remain limited, these agents may serve as adjuncts to standard therapy.

Neurostimulation techniques such as transcutaneous electrical nerve stimulation (TENS) and low-level laser therapy (LLLT) have been used to improve nerve conduction and reduce pain. Some centers are exploring surgical nerve decompression and facial reanimation surgery for refractory cases.

In addition, tissue engineering and 3D bioprinting technologies are under investigation for facial nerve reconstruction, especially after trauma or tumor resection. These experimental methods may soon complement traditional microsurgery in the treatment of severe nerve damage.

Rehabilitation and Psychosocial Support

Functional recovery often extends beyond nerve healing; it requires comprehensive rehabilitation. Early physiotherapy, biofeedback, and speech therapy are essential to prevent maladaptive muscle patterns. Psychological support should also be offered, as facial asymmetry can cause significant emotional distress.

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Interdisciplinary collaboration among neurologists, otolaryngologists, physiotherapists, and psychologists ensures the best patient outcomes. The modern approach to facial neuritis is thus holistic — addressing not only biological but also social and emotional aspects of recovery.

Conclusion

Facial neuritis remains a condition where early recognition and prompt treatment are vital. Corticosteroids and physical therapy continue to be the mainstay of care, but innovative treatments — including stem-cell therapy, extracellular vesicles, neurostimulation, and neuroprotective drugs — represent the future of facial nerve recovery.

Medical students and practitioners should stay informed about these developments, as regenerative and personalized medicine gradually transform the management of peripheral nerve disorders.

References:

1. Baugh, R.F. et al. (2023). “Clinical Practice Guideline: Bell’s Palsy”. American Academy of Otolaryngology–Head and Neck Surgery.

2. Gronseth, G.S. et al. (2023). “Evidence-Based Guideline Update: Steroids and Antivirals for Bell’s Palsy”. 100(2).

3. Li, X. et al. (2022). “Review of Drug Therapy for Peripheral Facial Nerve Regeneration”. “Biomedicines”.

4. Khalili, M.A. et al. (2023). “Extracellular Vesicle Therapy in Facial Paralysis: A Pilot Study”. “BMC Neurology’, 23(94).

5. Diels, H. (2022). “Facial Neuromuscular Retraining: A Practical Guide for Recovery After Facial Nerve Injury”. ‘Otolaryngologic Clinics of North America”.

6. Tiemstra, J.D., Khatkhate, N. (2023). “Bell’s Palsy: Diagnosis and Management”. “American Family Physician”, 107(4).

7. Yamamoto, T. et al. (2023). “Nimodipine Accelerates Facial Nerve Recovery After Surgery: A Clinical Trial”. “Journal of Neurological Sciences”, 449:120723.

8. Liu, W. et al. (2024). “Advances in Stem Cell Therapy for Facial Nerve Injury”. “Frontiers in Neurology”.

9. Zhao, S. et al. (2025). “Consensus on Facial Nerve Reconstruction and Neuroengineering Approaches”. “Plastic and Reconstructive Surgery Global Open”, 13(2).

10. Sun, Y. et al. (2023). “Acupuncture and Laser Therapy in Facial Palsy: Meta-Analysis of Clinical Outcomes”. “Complementary Therapies in Medicine.