Abstract Title: Application of Electromagnetic field therapy for the treatment of Neurological disorders

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Abstract (not more than 300 words)

The pharmacological treatments are based on the interaction of a chemical compound and living tissues, but they have limited effectiveness, expensive treatment and sometimes initiate adverse side effects. Therefore, alternative therapeutic modalities have gained considerable attention for two decades. Various articles suggested the use of Electromagnetic fields for the treatment of neurological disorders like stroke, Alzheimer, etc. Hence, the interest in the clinical utilization of the magnetic field is increasing all over the world. Electromagnetotherapy provides a secure method for the treatment of soft tissue injuries. The magnetic field can modulate secretion of growth factors(TGF-α, TGF-β), cell proliferation, induce genotoxic effects and change in cell membrane permeability (e.g., modulate the calcium ion transport via calmodulin-dependent pathway). In particular, low-frequency low-intensity pulsed electromagnetic field affects the cell membrane permeability, blood flow, cellular and molecular pathways and concentration of Anti-inflammatory/Pro-inflammatory (chemokine/cytokine expression) depending upon the waveform characteristics, frequency, exposure duration. It is reported that PEMF (Pulsed electromagnetic field) and SMF (static/continuous magnetic field) are effective in the healing of physical/chemical injuries in patients with cerebral ischemia, Parkinson's disease, and Alzheimer. Overall, the numerous experimental results highlight the role of EMF therapy as a viable adjuvant modality for several ailments.

Keywords—EMF, Neurological disorders, PEMF, SMF

Professional Biography (100-150 words)

Chandra Kant Singh Tekam has completed his Undergraduate degree in Biomedical engineering from National Institute of Technology Raipur, India and Postgraduate degree in Biomedical engineering from Indian Institute of Technology (Banaras Hindu University) Varanasi, India respectively. Currently, he is Pursuing Ph.D. from Indian Institute of Technology (Banaras Hindu University) Varanasi, India. His area of research is the Applications of Electromagnetotherapy in the treatment of neurological disorders. He has contributed a book chapter in Springer nature publishing group (ISBN 978-981-13-1453-7).



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Any Comments: