

Indications of Use (Therapeutic effects and uses) of Interferential Currents

Interferential therapy is used as an adjunct to other techniques such as ice, ultrasound, and mobilization. The common uses of interferential currents can be:

- i. Pain relief:** A good number of recent studies (e.g. Hurley et al. 2004, Johnson and Tabasam 2003, Walker et al. 2006,

McManus et al. 2006, Jorge et al. 2006, Gundog et al. 2012, Rocha 2012, Atamaz et al. 2012) provide substantive evidence for a pain relief effect of IFT. It is used clinically for the management of a wide variety of painful conditions such as the low back pain, osteoarthritis, etc. Interferential currents when applied at a frequency of 100 Hz reduce pain effectively by closing the gate to pain through stimulation of large diameter afferents. The mechanism of pain relief has already been described under the physiological effects. Though a wide variety of amplitude modulated frequencies have been used for the relief of pain, Hogenkamp et al. (1987) suggested the use of high AMF (70–150 Hz) for acute problems and pain and frequencies below 50 Hz for chronic and subacute conditions and where muscle contraction is required.

Uses: Osteoarthritis, low back pain.

- ii. **Muscle stimulation (muscle strengthening):** There is limited evidence at present for the “strengthening” effect of IFT, though the paper by Bircan et al. (2002) suggests that it might be a possibility. On the basis of the current evidence, the contraction brought about by IFT is no “better” than would be achieved by active exercise, though there are clinical circumstances where assisted contraction is beneficial.

Bellew et al. (2012) evaluated the stimulatory effects of IFT and various burst mode currents in terms of their capacity to generate significant quality of muscle contraction; the results were supportive of IFT as a treatment option.

Uses: Pelvic floor muscle strengthening.

- iii. **Edema relief:** IFT has been claimed to be effective as a treatment to promote the reabsorption of edema in the tissues. Again, the evidence is very limited in this respect and the physiological mechanism by which it could be achieved as a direct effect of the IFT remains to be established. The preferable clinical option in the light of the available evidence is to use the IFT to bring about local muscle contractions

which combined with the local vascular changes that will result could be effective in encouraging the reabsorption of tissue fluid. The use of suction electrodes may be beneficial, but also remains unproven in this respect. For this, an AMF of 1–10 Hz rhythmic is used.

Uses: Edema of hand in reflex sympathetic dystrophy, edema of the foot.

- iv. **Stress incontinence:** Interferential current has been used extensively in the treatment of stress incontinence and pelvic floor training (e.g. Parkkinen et al. 2004). For this purpose, a number of ways of electrode placement have been described. One of the modes of placement is to use a quadripolar technique, where electrodes are placed over the lower abdomen and inner thigh. In 1988, Laycock and Green suggested a bipolar technique, placing one electrode under both ischial tuberosities and one over the anterior perineum, immediately inferior to the symphysis pubis in females. Male patients were treated with two electrodes placed either side of gluteal cleft, under the ischial tuberosities, anterior to the anus. A study done in UK (Mantle 1991) for stress incontinence revealed that, after pelvic floor exercises, interferential therapy was the most widely preferred treatment.
- Uses:** Stress incontinence following prostatectomy.

Other Clinical Applications