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The Use of Delta-Wave Hypnoanalgesia as a Non-Pharmacological Adjunct to Reduce Perioperative Anxiety During Cataract Surgery: A Prospective Randomized Single-Blind Study

Study Design and Population:

A prospective, randomized, single-blind study, conducted over twelve weeks. The study was approved by the hospital institutional ethical committee “The Local Committee For The Protection Of Persons” under the number (09/2023/CLPP). Informed consent was obtained from all the recruited individuals. Patients aged 18-75 years scheduled for cataract surgery under regional anesthesia were included. Exclusion criteria included auditory or cognitive impairments, need for general anesthesia, or sedation.

Intervention:

198 Patients were randomized into two group. A total of 99 subjects were allocated to each group. The hypnoanalgesia group (H) received delta-wave binaural beats via headphones, while the control group (T) received no auditory intervention. Both groups underwent standard locoregional anesthesia (LRA).

Outcome Measures:

Primary outcomes included changes in mean heart rate (HR), systolic blood pressure (SBP), diastolic blood pressure (DBP), and mean arterial pressure (MAP). Hemodynamic and respiratory parameters were recorded at fixed intervals of five minutes. Secondary outcomes included, The Amsterdam Preoperative Anxiety and Information Scale (APAIS) scores for anxiety (Table 1).

Numeric Rating Scale (NRS) to assess pain severity using a 0 to 10 scale, with zero meaning “no pain” and 10 meaning “the worst pain imaginable”.

Bispectral index (BIS) was employed to evaluate level of conscious sedation through an electroencephalogram sensor on a scale of 1-100: A value below 60 are indicative of deep sedation, whereas values between 61 and 90 correlate with moderate sedation to mild anxiolysis.

A satisfaction assessment score has been adopted to measure the level of postoperative satisfaction of the patient, the anesthesiologist, and the surgeon. This tool is based on a numerical scale from 0 to 10, where 1 indicates complete dissatisfaction, 5 moderate satisfaction, and 10 maximum satisfaction.