

## **Magnesium Sulfate infiltration of Pectoralis major muscle for postoperative analgesia following mastectomy. A randomized controlled study.**

ملخص البحث باللغة الانجليزية:

**Background:** Breast cancer is the most prevalent cancer among Egyptian women as it represents 32.04% of all cancers according to the latest epidemiologic study. Modified Radical Mastectomy (MRM) is the surgical procedure commonly used for operable breast malignancies. Local anesthetic infiltration of the incision is simple but analgesia may not be sufficient due to limited duration of local anesthetics. Magnesium is a naturally occurring calcium competitor and a non-competitive antagonist of N-methyl-D-aspartate (NMDA) receptors that plays a major role in antinociception. NMDA receptors are not only present centrally but We hypothesized that .were also found peripherally in skin, muscle, and knee joint infiltrating magnesium in pectoralis major muscle would greatly improve postoperative pain following MRM especially during arm movement compared to local anesthetic wound infiltration alone.

**Methods. :** Seventy five female patients ASA physical status I, II scheduled for modified radical mastectomy were allocated into 3 groups (25 patients each). Group M received magnesium sulfate infiltration in pectoralis major muscle(PMM) plus bupivacaine wound infiltration. Group B received saline in PMM plus bupivacaine wound infiltration. Group C received saline for both PMM

and wound infiltration. Postoperative pain score at rest and during arm elevation, time to first analgesic request, cumulative morphine consumption in 24 h and possible complications were recorded.

**Results:** Assessment showed overall lower pain scores at rest and during elevation of the related arm in group M compared to groups B and C. Time to first analgesic request was longer in patients of group M with significantly less amount of post-operative opioid consumption ( $P < 0.0001$ ) and consequently less number of attacks of PONV in first post-operative 24 h. In group M, only 16% required morphine compared to 48 and 72% in bupivacaine and control groups.

**Conclusion:** Magnesium sulfate infiltration of pectoralis major muscle following modified radical mastectomy is simple and provides effective postoperative analgesia at rest and during arm elevation superior than bupivacaine wound infiltration alone resulting in greater opioid-sparing and better patient comfort.