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Effects of intraoperative magnesium sulphate administration on the incidence of chronic postsurgical pain in patients undergoing total knee arthroplasty

Magnesium sulphate (MgSO₄) is an effective analgesic adjuvant for acute postoperative pain. However, the effect of MgSO₄ on chronic postsurgical pain (CPSP) remains unknown. We investigated this effect of MgSO₄ in patients undergoing total knee arthroplasty (TKA) retrospectively. The operation was conducted by the same experienced surgeon under spinal anesthesia, unilaterally (n=355), staged bilaterally (n=489, at 1-week interval) or simultaneous bilaterally (n=31). The magnesium group received MgSO₄ (50 mg/kg) over 15 min followed by a continuous infusion (15 mg/kg/h) during the operation. Medical records of a total of 875 patients [control group (n = 780) and the magnesium group (n = 95)] for 6 years (2012~2017) were reviewed retrospectively. In case of insufficient records, telephone interview was added. The incidences of CPSP at postoperative one year were compared between the two groups. The incidence of CPSP at one year after TKA in the magnesium group (7.4%) was significantly lower than that of the control group (16.4%) (P = 0.031). Intraoperative administration of MgSO₄ was effective for preventing the occurrence of CPSP after TKA.

Biography

Sang-Hwan Do is specialized in Orthopaedic Anesthesia and has quite a few clinical experiences of using magnesium sulphate during surgeries of diverse kinds. Through his numerous publications on magnesium, he stresses the efficacies of this mineral in surgical patients, such as improvement of postoperative pain, potentiation of intraoperative neuromuscular blockade and so on. Now, he is working at Seoul National University Bundang Hospital.

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