Fuzzy Pain Demand Index from an i-Pain System for Assessment of Postoperative Pain via Patient-Controlled Analgesia Using Different Amounts and Combination Drugs

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摘要

Abstract

An advanced multilayer hierarchical structure included a personal digital assistant (PDA) device for an j-pain system is described in this paper. This PDA is like a messenger that not only records visual analog scales (VASs) and side effects but also collects the patient-controlled analgesia (PCA) data via the RS232 port by wire (i.e., cable) or wireless (i.e., Bluetooth) at time of medical staff visits. In our previous study, a novel fuzzy pain demand (FPD) derived from the interval of each bolus of PCA according to a fuzzy modeling algorithm can show the patients' dynamic demand and past efforts to overcome the postoperative pain. Hence, this study investigated whether FPD index can distinguish the analgesic efficacy using different amounts and combination drugs via six hundred and seventy- nine patients with upper and lower abdominal, spinal, and extremity procedures.