

Hypoxemia and Postoperative Monitoring After Anesthesia: A Prospective Observational Study Using Portable Pulse Oximetry in a Resource-Limited Setting in Guatemala

Pulse oximetry is a critical component of patient monitoring to ensure adequate oxygenation in the perioperative period. However, its use remains limited in low- and middle-income countries due to device scarcity, limited funding, and lack of training. This prospective observational study describes the incidence of early postoperative hypoxemia (EPH) with newly implemented portable pulse oximetry and associated factors that impact postoperative management at the Hospital Nacional de Coatepeque (HNC), a primary referral public hospital in Guatemala. Semi-structured interviews were conducted with perioperative medical staff to explore perspectives regarding postoperative monitoring and patient safety in a resource-limited setting. One hundred patients were included, of which 10% experienced EPH. Patient age was significantly associated with EPH. The average duration in the recovery area of 14 minutes, with a lack of subsequent monitoring, was a primary concern of the 14 interviewed medical personnel. The greatest perceived needs include enhanced monitoring, increased staffing, and a dedicated post-anesthesia care unit. Pulse oximetry is essential to detect previously unrecognized EPH. Improved postoperative monitoring and increased recovery time and staffing are priorities to enhance patient safety at public hospitals in Guatemala.