Total hip arthroplasty (THA) is a standardized procedure associated with moderate to severe pain on mobilization. Several techniques are used for management of postoperative pain but no gold standard exists, and recovery, inflammation, morbidity, complications as well as health-related quality of life following different analgesic techniques for pain management during THA has not been fully investigated. We studied local infiltration analgesia (LIA), which is today commonly used in Sweden, in the four studies that are included in this thesis. During LIA, the surgeon injects a mixture of ropivacaine, ketorolac and adrenaline in a standardized way in the traumatized tissue planes during surgery. We compared LIA to intrathecal morphine, or femoral nerve block. We found better postoperative pain relief when using LIA, compared to the other two techniques. LIA resulted in lower postoperative pain intensity and lesser rescue analgesic consumption as well as lower inflammation in the postoperative period. However, no difference was found in recovery times, home discharge or postoperative (early or late) complications, based on choice of analgesic technique. LIA is an easy-to-use technique that can easily be applied by the surgeon, results in better postoperative pain management and without the risk of short- or long-term complications.