



**Long-term outcome, socioeconomic aspects, and postoperative
inflammatory response in minimally invasive rectal cancer
surgery**

av

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Abstract

In Sweden, more than 2,200 individuals are diagnosed with rectal cancer each year and surgical resection is the cornerstone of treatment. Minimally invasive surgery (MIS) was introduced for abdominal rectal cancer resection in the 1990s. Proven advantages of MIS in the short term include less intraoperative bleeding, less postoperative pain, faster postoperative mobilization, and shorter hospital stay. Large randomized studies have also shown that MIS is not inferior to OPEN with regard to the oncological short-term or long-term outcome.

The aim of this thesis was to increase the knowledge of MIS from a Swedish perspective regarding long-term oncological outcome, socioeconomic aspects, and the postoperative inflammatory response in curative abdominal rectal cancer surgery.

Study I included all patients who were diagnosed with clinical stage I–III rectal cancer during 2010–2016. More than 8,300 patients were identified via the Swedish Colorectal Cancer Registry (SCRCR). The study had a so-called non-inferiority design and investigated overall 5-year survival. The results showed that survival was not worse in patients who underwent minimally invasive surgery in comparison to patients who underwent open surgery.

Study II included all patients who were diagnosed with pathological stage I–III cancer of the colon 2010–2016. More than 11,000 patients were identified via the SCRCR. The study was designed in the same way as Study I. The results demonstrated that minimally invasive surgery was not inferior to open surgery.

Study III analysed the potential impact of socioeconomic status, measured as level of education and household income, regarding the likelihood of receiving minimally invasive surgery. All patients who underwent curative abdominal rectal resection surgery during 2010–2016 were included. More than 8,000 patients were identified. The results showed that patients with the highest level of education and those in the highest income quartile were more likely to be operated on with minimally invasive technique.

Study IV analysed the inflammatory response, measured as serum C-reactive protein during postoperative days 1–5, in all 520 patients undergoing abdominal rectal resection in Örebro between 2011 and 2021. Following exclusions based on postoperative adverse events, 382 patients remained for final analysis. The study demonstrated a trend for a less pronounced inflammatory response in patients operated with robot-assisted laparoscopy compared with conventional laparoscopy.