

## Discussion

Although this paper reflects our perioperative experience with the laparoscopic treatment of colorectal cancer within the 5-year interval, without direct comparison with open surgical access, the results show that patients who receive laparoscopic treatment have a short hospital stay, operating time equivalent to the open surgery approach, very low rates of wound infections, bleeding and anastomotic leakage, low pulmonary complications, no admission to the ICU unit or need for mechanical ventilation, no need for blood transfusions, no repeated hospitalizations and no mortality. Although our clinical long-term oncological outcomes of laparoscopic vs. open surgery remain to be seen, these perioperative results show that recovery, physiological function, and other short-term outcome measures are improved with the laparoscopic approach.<sup>3-6</sup>

It has been reported that hospital volume, surgeon volume, and, therefore, the rate of laparoscopic surgery may affect the results of colorectal surgery. Higher hospital and surgeon volume are generally related to better outcomes after laparoscopic surgery for colorectal cancer.<sup>7</sup> However, what is evident is that although our Clinic does not have a high rate of laparoscopic colorectal surgery, the rates of complications are still very low. This could be result of the high rate of laparoscopic treatment for other digestive pathologies at our clinic and the right selection of cases for laparoscopy.

In our study, laparoscopic surgery for colorectal cancer was associated with comparable operation time to the open access surgery, which was slightly lower but generally compatible with most previous reports.<sup>4,15</sup> Although prolonged operation time was a suggested possible risk factor for the development of postoperative pulmonary complications, our results show that laparoscopic surgery was associated with no ICU admission and postoperative mechanical ventilation. This was outweighed by other factors like incision size and pain. Conversion from laparoscopic to open surgery has been related to worse outcome, but this has probably been associated with issues stemming from the learning curve. Risk factors for conversion for various populations are widely reported within the literature. Clancy et al. recently performed a meta-analysis of 15 studies and reported a mean conversion rate of 17.9% ( $\pm$  10.1%) with males, rectal tumor; T3/T4 stage and node-positive disease as factors that negatively influence the completion