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P-325 - ROBOTIC VERSUS LAPAROSCOPIC SURGERY FOR RECTAL CANCER: A COMPARATIVE COSTS-EFFECTIVENESS STUDY

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Resumen

Introduction: Even if the clinical outcomes of robotic rectal resections are under investigation, the related robotic costs have not yet been well addressed, and the differences between the robotic rectal resection costs and the laparoscopic approach are still not well known. We have therefore performed a prospective comparative study of robotic rectal resections (RRR) and laparoscopic rectal resections (LRR) performed at our centre with the aim to evaluate the cost-effective outcomes of robotic versus laparoscopic surgery.

Methods: This is an observational, comparative prospective non-randomized study which includes patients that underwent laparoscopic and robotic rectal resection reaching a minimum of 6 months of follow up from February 2014 to March 2018, at the Sanchinarro University Hospital, Madrid. An independent company performed the financial analysis and fixed costs were excluded. Outcome parameters included surgical and post-operative costs, quality adjusted life years (QALY), and incremental cost per QALY gained or the incremental cost effectiveness ratio (ICER). The primary end-point was to compare clinical outcome as well as cost effectiveness study between both groups. Data has been recorded in a SPSS Statistics Version 20.0 database. To compare the means of the quantitative variables when the variables followed a normal distribution, a variance analysis and a Student's t-test were used. For the rest of the variables, both Mann-Whitney and Kruskal-Wallis tests were performed. Statistical significance was defined as having a p 0.05. A sensitivity analysis was carried out in order to propagate the uncertainty of the estimations to the results of the model. We use a multivariate and stochastic sensitivity analysis performed by 5,000 Monte Carlo simulations. The cost-effectiveness plane was used to represent all pairs of solutions of the model. We also computed a cost-effectiveness acceptability curve which plots the probability that the RRR was cost-effective relative to LRR over a reasonable range of levels of willingness-to-pay. A willingness-to-pay of 20,000 € and 30,000 € per QALY was used as a threshold to recognize which treatment was most cost-effective.

Results: A total of 86 RRR and 112 LRR were included. The mean operative time was significantly lower in the LRR approach (336 vs 283 min; p = 0.001). The main pre-operative data, overall morbidity, hospital stay and oncological outcomes were similar in both groups, except for the readmission rate (RRR: 5.8%, LRR: 11.6%; p = 0.001). The mean operative costs were higher for RRR (4,285.16 vs 3,506.11€; p = 0.04); however, the mean overall costs were similar (7,279.31€ for RRR and 6,879.8€ for the LLR; p = 0.44). Mean QALYs at 1 year for RRR group (0.5624) was higher than that associated with LRR (0.5066) (p = 0.018). At a willingness-to-pay threshold of 20,000 € and 30,000 €, there was a 61.18% and 64.09% probability that RRR group was cost-effective relative to LRR approach.

Conclusions: The novelty of the present study is to evaluate the cost-effectiveness of RRR compared with LRR. This study provides data of cost-effectiveness differences between RRR and LRR approach showing a benefit for the RRR.