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## OBJECTIVE

To assess the cost effectiveness of laparoscopic cholecystectomy compared to open cholecystectomy in Greece.

## METHOD

A single-center, prospective study was conducted for a one year's period. In total, 58 consecutive patients were recruited and the collected baseline data includes socio-demographic, anthropometric and clinical characteristics, as well as medical history. The mean cost of each procedure was estimated using the micro-costing method and the bottom-up approach, from the insurance provider perspective.

## RESULTS

In total, 58 patients were subjected to cholecystectomy, of which 46 to laparoscopic (17 males, 29 female) and 12 open to cholecystectomy (8 males, 4 female), between January - December 2021. The mean age of the patients for the laparoscopic and open procedures was 59.48 years  $\pm$  13.525 and 74.75 years  $\pm$  17.02, respectively, ( $p=0.002$ ). The mean (95% CI) total (direct) surgical cost (including human resources, medication, medical supplies and electricity consumption) for patients subjected to laparoscopic cholecystectomy was estimated at € 728.96 (€ 669.99 - € 787.93), whereas for patients undergoing the open procedure it was estimated at € 445.64 (€ 388.40 - € 502.87), ( $p=0.162$ ). The mean length of hospital stay for laparoscopic surgery was 2.04 days (range: 1-6 days), and for open surgery 7.92 (range: 2 - 22 days), ( $p<0.001$ ). Considering the duration of hospitalization as a measure of effectiveness, the laparoscopic procedure was found to be more cost effective than the open method, with an Incremental Cost Effectiveness Ratio, (ICER) = - 48.18 €/day.

## CONCLUSIONS

The data revealed that although procedure of laparoscopic cholecystectomy is associated with a relatively high direct surgical cost, with medical supplies contributing the most, it is more cost effectiveness compared to open cholecystectomy.

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