

Level of evidence:

The literature search resulted in 22 original articles; 20 cohort studies (four medium and 16 low quality), one randomised study of low quality and one case series for evaluation of complications.

Comparing laparoscopic with open surgery for kidney neoplasm, the level of evidence is generally very low for conclusions regarding the primary outcome cancer-specific survival.

For partial kidney resection

Laparoscopic resection may be inferior to open surgery concerning radicality at surgery (low level of evidence, GRADE ⊕⊕), but the statistical significance is on the boarder (p=0.05).

For the outcomes tumour-free survival, kidney function and operating time, no conclusions can be drawn (very low level of evidence, GRADE ⊕).

The level of evidence for total survival not being inferior, ischemic time being longer and hospital stay being shorter, for laparoscopic vs. open kidney resection, is low (GRADE ⊕⊕).

For nephrectomy

For the outcomes total and tumour-free survival, radicality, renal function and operating time, no conclusion can be drawn (very low level of evidence, GRADE ⊕).

The level of evidence for hospital stay being shorter, for laparoscopic vs. open nephrectomy is low (GRADE ⊕⊕).

Complications:

Major complications were reported to be three times more frequent after laparoscopic compared to open surgery. Post-operative bleeding was three times more frequent after laparoscopic compared to open surgery kidney resection.

Ethical aspects:

The long term outcome of laparoscopic compared to open surgery kidney resection concerning radicality and cancer-specific survival is unclear. There are ethical aspects of introducing a method when the long term effects of importance are unknown.

Economical aspects

The cost for each laparoscopic nephrectomy is estimated to be 1000 € higher than for open surgery, corresponding to an increased cost of 40 000 €/year, based on 40 laparoscopic nephrectomies at SU.

Concluding remarks

There is low level of evidence to evaluate if laparoscopic surgery for kidney neoplasm is as effective as open surgery concerning the most important outcome tumour-free survival.

Laparoscopic resection may be inferior to open surgery concerning radicality, but the statistical significance is on the border. Complications are more frequent after laparoscopy and the cost for surgery is somewhat higher.

On behalf of the Regional HTA Centre of the Western Region in Sweden

Göteborg, Sweden, 2011-04-06

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The Regional Health Technology Assessment Centre (HTA-centrum) of Region Västra Götaland, (VGR) has the task to make statements on HTA reports carried out in VGR. The statement should summarise the question at issue, level of evidence, efficacy, risks, and economical and ethical aspects of the particular health technology that has been assessed in the report.

David Lyrdal, MD, PhD and Ali Khatami, Director, both from the Department of Urology, Sahlgrenska University Hospital Sweden requested the present HTA.

A working group under the chairmanship of David Lyrdal, MD, PhD, Göran Holmberg, MD, PhD, Elin Axén, MD, from the Department of Urology, Sahlgrenska University hospital, Sweden produced the HTA report. The participants from the HTA centre were Annika Strandell, Associate professor, Lennart Jivegård, Associate professor, Therese Svanberg, HTA-librarian, and Frida Jorstedt, librarian.

Magnus Hakeberg, Professor, Dental public health sciences at the Institute of Odontology, Göteborg and Sven-Erik Ricksten, Professor, Department of Cardiothoracic Anesthesia and Intensive Care have critically appraised the report.

The project lasted during the time period 2010-09-29 – 2011-04-06. The literature search covered publications up to October 2010.