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| <b>Title</b>     | <b>A Systematic Review of Holmium Laser Prostatectomy for the Treatment of Benign Prostatic Hyperplasia</b>   |
| <b>Agency</b>    | ASERNIP-S, Australian Safety and Efficacy Register of New Interventional Procedures – Surgical<br>PO Box 688, North Adelaide, South Australia 5006, Australia; Tel +61 8 8239 1144, Fax +61 8 8239 1244 |
| <b>Reference</b> | ASERNIP-S Report Number 23, ISBN 0909844577; Full text available:<br><a href="http://www.surgeons.org/asernip-s/publications.htm">www.surgeons.org/asernip-s/publications.htm</a>                       |

## Aim

To compare the safety and efficacy of holmium laser resection of the prostate (HoLRP) and/or holmium laser enucleation of the prostate (HoLEP) and transurethral resection of the prostate (TURP).

## Conclusion and results

Three randomized controlled trials (RCTs) comparing HoLRP and TURP and two comparing HoLEP and TURP were identified, as was one uncontrolled comparative study comparing each of the holmium techniques with TURP. There were 13 HoLRP case series and 10 HoLEP case series. The quality of the evidence was average. Both of the holmium laser procedures were found to be superior to TURP in several key indicators of blood loss (transfusion rates, postoperative bladder irrigation, duration of catheterization, and length of hospital stay), although blood loss itself was not often reported. For other safety outcomes, eg, mortality and rates of perforation, it was difficult to draw firm conclusions due to a lack of high quality data. The holmium laser procedures appear to be equivalent to TURP for symptom relief, but TURP was superior to the holmium laser procedures in terms of operative times and retrieved tissue. Adding the mechanical morcellator to HoLEP appeared to result in more tissue retrieval than in TURP. The lack of long-term followup in most holmium laser studies meant that no conclusion could be drawn about the long-term durability of the procedures compared to TURP.

## Recommendations

The ASERNIP-S review group classified the evidence base as average. Holmium laser procedures were at least as safe as TURP in terms of blood loss, rates of stricture, and urinary tract infection. For other safety indicators, ie, mortality, perforation rates, and other complications, the relative safety of the holmium laser procedures could not be determined. The holmium laser procedures appear to be at least as efficacious as TURP in the short term, but long-term efficacy could not be determined. At this stage, research priorities should focus on provid-

ing long-term followup and addressing problems with losses to followup that threatened the validity of many of the studies.

## Methods

OVID PreMEDLINE, OVID MEDLINE, Current Contents, Cochrane Library, EMBASE, UK National Research Register, NIH Clinical Trials.Gov, PubMed, Science Citation Index, SIGLE, and the HTA Database were searched through August 2002. Studies were included, without language restriction, if they dealt with benign prostatic hyperplasia and contained data on at least one of the specified outcomes. Studies that utilized combination laser therapy were excluded. TURP case series derived from RCTs of more than 50 patients were also retrieved as benchmark information.