Australian Government

Department of Health and Ageing

Horizon Scanning Technology Prioritising Summary

Temperature controlled radiofrequency tonsil ablation (TCRF-TA)

April 2004

ASERNIP-S

Australian Safety and Efficacy Register of New Interventional Procedures - Surgical

Royal Australasian College of Surgeons

Electronic copies can be obtained from http://www.horizonscanning.gov.au

Enquiries about the content of the report should be directed to:

HealthPACT Secretariat
Department of Health and Ageing
MDP 106
GPO Box 9848
Canberra ACT 2606
AUSTRALIA

The production of this Horizon scanning prioritising summary was overseen by the Health Policy Advisory Committee on Technology (HealthPACT), a sub-committee of the Medical Services Advisory Committee (MSAC). HealthPACT comprises representatives from health departments in all states and territories, the Australia and New Zealand governments; MSAC and ASERNIP-S. The Australian Health Ministers' Advisory Council (AHMAC) supports HealthPACT through funding.

This Horizon scanning prioritising summary was prepared by staff from the Australian safety and Efficacy Register of New Interventional Procedures – Surgical (ASERNIP-S).

NAME OF TECHNOLOGY:
Temperature controlled radiofrequency tonsil ablation (TCRF-TA).

PURPOSE & TARGET GROUP:
This procedure aims to treat patients with chronic tonsillitis, a condition usually addressed with tonsillectomy. It aims to reduce postoperative side effects and improve recovery time and if proven effective, it may be a viable alternative to tonsillectomy.

STAGE OF DEVELOPMENT (IN AUSTRALIA):

- ☐ Experimental
- ☐ Investigational
- ☐ Nearly established
- ☐ Established
- ☑ Established but changed indication or modification of technique
- ☐ Should be taken out of use

INTERNATIONAL UTILISATION:

COUNTRY	LEVEL OF USE		
	Trials underway	Limited use	Widely Diffused
USA	✓		

IMPACT SUMMARY

Background:
TCRF-TA is performed for treatment of enlarged tonsils. After having this treatment, significant symptomatic improvements were noted in patients with chronic tonsillitis, including reduction in sore throat symptoms and the use of antibiotics.

This procedure is based on the application of a radiofrequency probe placed in up to eight sites in each tonsil and heated to 40-85°C for 10-15 seconds. The probe creates small channels in the tonsil, dissipating ionising energy to the surrounding tissue, causing disruption to molecular bonds. This results in subsequent tissue death days or weeks later, leading to shrinkage of the tonsils.[1,2]

Clinical need and burden of disease:
Tonsillectomies are regarded as one of the most common surgical procedures worldwide. Over the 2001-2002 financial year there were 33 828 tonsillectomies performed in Australia (Tenant S, personal communication). The advantages of TCRF-TA are ease of the operations, faster healing, less postoperative care, minimal discomfort with the potential to decrease the risk of post-tonsillectomy haemorrhage and dehydration compared to classic tonsillectomy (cold dissection).[3]

Estimated speed and geographic and practitioner use patterns of diffusion in the health system:

American surgeons Kerner and Silva[3] developed this new application of an existing technology in 2003 and have recently presented their findings in America (September 2003).

Existing comparators:

- cold knife dissection
- monopolar and bipolar diathermy
- cryosurgery
- suction diathermy
- bipolar scissor
- KTP-532 laser
- CO_2 laser
- ultrasonic removal
- microscopic bipolar diathermy
- radiofrequency coblation [2,4]

Estimated cost impact:

The cost of TCRF-TA is approximately US $2 100 [5]; the surgery costs for classic tonsillectomy are approximately US $2 500.

Efficacy and safety issues:

Short term efficacy data exist from one case series.[3] A total of 85 patients were treated with TCRF-TA for chronic tonsillitis, tonsillar hypertrophy or sleep disordered breathing. Overall 91% (77/85) patients reported improvement in tonsil symptoms after a single treatment; three patients required re-treatment.

After TCRF-TA for patients with chronic tonsillitis:

- blood loss was negligible
- tonsil size reduction occurred after two weeks and continued up to nine months
- no post-treatment haemorrhages, dehydration or readmission occurred
- no complications or significant discomfort were reported
- postoperative pain medication was limited to 72 hours
- at six-month follow-up, all noted a significant reduction in the number of sore throats, use of antibiotics and snoring.

Adverse events:

- two patients experienced transient oropharyngeal blood when coughing out some sloughed tonsil tissue; this was resolved with salt water swishes
- two patients reported severe taste distortion which was resolved within six months.

Ethical issues:

Not applicable.

Cultural or religious considerations:

Not applicable.

Other issues:

- there is a small risk of regrowth of the tonsillar tissue
- the amount of tonsil reduction is unpredictable and can vary from 30-70%; some patients may require re-treatment

- patients may encounter initial swelling of the tonsils postoperatively, which would require monitoring in a critical care setting overnight, particularly in the paediatric group.[2]

These issues would increase the costs associated with this procedure.

Conclusion:

Limited evidence exists on the safety and efficacy of this procedure for treatment of chronic tonsillitis. Long-term safety and efficacy data from controlled trials would be required before this procedure could be routinely used.

☐ Horizon Scanning Report ☐ Full Health Technology Assessment
☑ Monitor ☐ Archive

REFERENCES:

1. Plant RL. Radiofrequency treatment of tonsillar hypertrophy. *Laryngoscope* 2002; **112**(8 part 2) Suppl. 100:20-2.
2. Friedman M, LoSavio P, Ibrahim H, Ramakrishnan V. Radiofrequency tonsil reduction: safety, morbidity and efficacy. *Laryngoscope* 2003;**113**(5):882-7.
3. Radiofrequency effective and safe treatment for chronic tonsillitis. http://www.newswise.com/p/articles/view/500936/ . Accessed October 2003.
4. Tonsillectomy procedures. http://www.entnet.org/KidsENT. Accessed October 2003.
5. RF tonsillar ablation. http://www.ahfmr.ab.ca Accessed October 2003.

SOURCES OF FURTHER INFORMATION:

Bäck L, Paloheimo M, Ylikoski J. Traditional tonsillectomy compared with bipolar Radiofrequency thermal ablation tonsillectomy in adults: A pilot study. *Archives of Otolaryngology-Head and Neck Surgery* 2001;**127**(9):1106-12.

Nelson LM. Radiofrequency treatment for obstructive tonsillar hypertrophy. *Archives of Otolaryngology-Head and Neck Surgery* 2000;**126**(6):736-40.

SEARCH CRITERIA TO BE USED:

A search of MEDLINE, PubMed and Cochrane Library, Current Controlled Trials metaRegister, UK National Research Register International, Network for Agencies for Health Technology Assessments, relevant online journals and the Internet was conducted in October 2003.

Search terms used were: ton$ and radiofrequency, ton$ and ablation, ton$ and radioablation.