

health  
**technology**  
assessment



EXECUTIVE  
SUMMARY

**SECONDARY  
GENERATION  
ENDOMETRIAL  
ABLATION**

HEALTH TECHNOLOGY ASSESSMENT UNIT  
MEDICAL DEVELOPMENT DIVISION  
MINISTRY OF HEALTH  
MOH/PAK

## **EXECUTIVE SUMMARY**

### **INTRODUCTION**

Menorrhagia is a common clinical problem and makes a large contribution to the workload of gynaecologists. Dysfunctional uterine bleeding (DUB) affects 20-30% of women and accounts for 12% of gynaecological referrals. Sixty percent of these women will have undergone hysterectomy within 5 years of referral, making it the commonest major gynaecological operation. A survey of over 36 000 hysterectomies reported a mortality rate of 0.38 per 1 000 operations, and serious morbidity rate of 3% (return to theatre to stop bleeding, visceral injury and other complications).

The first generation endometrial ablation techniques, the transcervical resection of the endometrium (TCRE) as well as roller ball electro coagulation (RBE), have been proven to be effective but the complication rate has been reported higher for TCRE. There is still a need to improve training in hysteroscopic surgery and to develop ablative techniques that allow the endometrium to be easily and safely destroyed to reduce the menstrual blood loss. Second generation ablative techniques that are minimally invasive, have a low risk profile, and are technically simple to operate have, therefore, been developed with the aim of improving on these existing minimal access techniques, all aimed at treating DUB, effectively, safely, quickly and preferably in the ambulatory setting. These include balloon heating, intrauterine instillation of heated saline, endometrial laser intrauterine thermal therapy, global 3-D ablation, punctual vaporation, photodynamic endometrial ablation, microwave endometrial ablation, radiofrequency and cryotherapy.

### **OBJECTIVE**

To determine the safety, effectiveness, organizational implications and cost-effectiveness of various (nine modalities) second generation endometrial ablation techniques in the management of menorrhagia.

### **RESULTS**

**ENDOMETRIAL LASER INTRA-UTERINE THERMOTHERAPY** - The clinical data is sparse. Studies have insufficient patient numbers or lengths of follow-up on which to fully evaluate the long-term efficacy, safety or cost effectiveness.

**INTRA-UTERINE SURGERY USING A COAXIAL BIPOLAR ELECTRODE** - The clinical data is insufficient. There are inadequate patient numbers or lengths of follow-up in which to fully evaluate the long-term efficacy, safety or cost effectiveness.

**INTRAUTERINE INSTILLATION OF HEATED SALINE** - Studies on intrauterine instillation of heated saline are prospective, observational studies involving small number of patients and short follow-up. More studies are needed to further address the long term effectiveness.

**MICROWAVE ENDOMETRIAL ABLATION** - There is some evidence that microwave endometrial ablation is safe and effective.

**ENDOMETRIAL CRYOABLATION** - There is some evidence that endometrial cryoablation is a safe and effective procedure in the treatment of dysfunctional uterine bleeding.

**PUNCTUAL VAPORATION** - There is evidence that endometrial ablation with a vaporizing electrode is safe and effective.

**PHOTODYNAMIC ENDOMETRIAL ABLATION** - Photodynamic endometrial ablation is selective and does not cause endometrial fibrosis or adhesions. There is evidence of effectiveness of photodynamic endometrial ablation.

**THERMAL BALLOON ENDOMETRIAL ABLATION** - There is sufficient evidence that thermal balloon endometrial ablation is easy to perform and compares favourably with first-generation endometrial ablation, in terms of effectiveness (reduced menstrual bleeding, dysmenorrhoea and premenstrual symptoms with concomitant improvement in quality of life), patient satisfaction and safety profile. It can be undertaken using local anesthesia on an ambulatory basis.

**RADIOFREQUENCY ENDOMETRIAL ABLATION** - There is evidence that radiofrequency endometrial ablation is safe and effective.

#### **RECOMMENDATIONS**

Vaporizing electrode, photodynamic endometrial ablation, thermal balloon endometrial ablation and radiofrequency endometrial ablation are recommended for use in endometrial ablation. Further evidence is required before endometrial laser intra-uterine thermotherapy, coaxial bipolar electrode, intrauterine instillation of heated saline, microwave endometrial ablation and endometrial cryoablation can be recommended.

