

# Contraception in women with medical conditions

Sarah L Millar

Sharon T Cameron

## Abstract

Pregnancy can result in both maternal and fetal morbidity in women with medical conditions, making the provision of contraception a crucial part of their care. Obstetricians and gynaecologists will frequently encounter these women in the outpatient and inpatient settings and will be expected to have knowledge of the safest and most effective methods of contraception for that individual. The UK medical eligibility criteria gives guidance regarding the safety of contraceptive methods in women with medical conditions. This review will explain the rationale behind this guidance for women with conditions of the cardiovascular, gastrointestinal, reproductive and immune systems as well as considering the effectiveness of currently available methods of contraception.

**Keywords** contraception; medical eligibility; pregnancy; safety

## Introduction

Forty six percent of pregnancies in the UK are unplanned. Unplanned pregnancies can have far reaching consequences for women and healthcare services. It is estimated that unintended pregnancy costs the NHS £1 billion pounds annually. Increasing the uptake of effective contraception is one way of reducing unplanned pregnancies. It is thought that £11 is saved in healthcare costs for every £1 spent on contraception in England.

The physiological changes in pregnancy may cause some medical conditions to deteriorate in pregnancy (Table 1). Also, some medical conditions or their treatments, may adversely affect the outcome of pregnancy. Pre pregnancy counselling is often imperative in women with chronic health conditions and women may be advised to delay or avoid pregnancy. These women need reliable and effective contraception.

However, clinicians may be unfamiliar with which methods of contraception are suitable for such women and may be concerned about the safety of contraception. There are several issues to consider when faced with a woman of reproductive age who does wish to become pregnant and has an acute or chronic medical condition:

- pregnancy in women with co-existing medical conditions can result in maternal and perinatal morbidity and

mortality. These risks are usually greater than the risks associated with contraceptive use. Effective contraception should not be withheld without good cause.

- some contraceptives can cause deterioration in certain medical conditions.
- medical conditions and their treatments may reduce the effectiveness of some methods of contraception.
- medical treatments may have teratogenic effects.

In this review we will consider the effectiveness of currently available methods of contraception and their suitability in women who have diseases of the cardiovascular, gastrointestinal, reproductive and immune systems using the most up to date evidence. We will also consider contraception in obesity. Abortion is clearly important in women with medical conditions who have unplanned pregnancy and referral to a maternal medicine specialist for counselling may be appropriate to discuss the risks of continuing with the pregnancy and termination.

The UK medical eligibility criteria for contraceptive use (UK MEC) will be referred to throughout this review. The UK MEC gives professionals guidance on the safety of contraception in women with medical conditions and other characteristics.

- UK MEC category 1 = A condition for which there is no restriction for the use of the method.
- UKMEC category 2 = A condition where the advantages of using the method generally outweigh the theoretical or proven risks.
- UKMEC category 3 = A condition where the theoretical or proven risks usually outweigh the advantages of using the method. The provision of a method requires expert clinical judgment and/or referral to a specialist contraceptive provider, since use of the method is not usually recommended unless other more appropriate methods are not available or not acceptable.
- UKMEC category 4 = A condition which represents an unacceptable health risk if the method is used.

## Efficacy and mode of action of currently available methods of contraception

The modes of action and effectiveness of currently available contraception in the UK are outlined in Table 2. Long acting reversible contraception (LARC) progestogen only implant, intra-uterine system (IUS), intrauterine device (IUD) and depot medroxyprogesterone acetate (DMPA) have lower failure rates, are acceptable to women and have been shown to be more cost effective at 1 year than contraceptive pills. The effectiveness of LARC methods generally do not rely on user compliance and so their typical failure rates are far superior to non LARC methods. Therefore, all women, and in particular those with co-existing medical conditions, should be encouraged to use LARC where appropriate.

## Cardiovascular system

Cardiac disease is the leading cause of maternal death in the UK from indirect causes (deaths resulting from previous existing disease which was aggravated by the physiological effects of pregnancy). Delaying or avoiding pregnancy in severe disease may be advised. Although there are some concerns regarding safety of some forms of contraception in women with CVD, the risks are generally much smaller than those of pregnancy. For

**Sarah L Millar** MBChB MFSRH Specialty Trainee Community Sexual and Reproductive Health, Chalmers Sexual Health Clinic, Edinburgh, Scotland, UK. Conflicts of interest: none declared.

**Sharon T Cameron** MBChB MD MFSRH FRCOG Chalmers Sexual Health Clinic, Edinburgh, Scotland, UK; Consultant Gynaecologist and Clinical Reader, Obstetrics and Gynaecology, University of Edinburgh, Edinburgh, UK. Conflicts of interest: SC holds an independent investigator initiated research grant from Pfizer UK.

### Conditions that may pose a significant health risk during pregnancy

- Bariatric surgery within the last 2 years
- Breast cancer
- Cardiomyopathy
- Complicated valvular disease
- Cystic fibrosis
- Diabetes: insulin dependent, or with nephropathy/retinopathy/neuropathy or other vascular disease
- Ischaemic heart disease
- Malignant liver tumours (hepatocellular carcinoma)
- Morbid obesity (BMI  $\geq 40$  kg/m<sup>2</sup>)
- Organ transplant/failure
- Rheumatoid arthritis
- Severe (decompensated) cirrhosis
- Endometrial or ovarian cancer
- Epilepsy
- Gestational trophoblastic neoplasia
- HIV-related disease
- Hypertension
- Sickle cell disease
- Stroke
- Systemic lupus erythematosus (SLE)
- Systemic sclerosis
- Thrombogenic conditions
- Tuberculosis
- Teratogenic drugs

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**Table 1**

example, the risk of venous thromboembolism (VTE) in the postpartum period is 300–400 per 10,000 women compared with 5–12 per 10,000 women using combined hormonal contraception (CHC). Table 3 outlines the UK MEC guidance for cardiac diseases.

### Combined hormonal contraception

The risks of ischaemic heart disease and stroke have been shown to be increased in women using CHC who have hypertension and/or smoke. CHC can also elevate blood pressure and cause fluid retention. Therefore, the risks of prescribing CHC usually outweighs the benefits in women who have existing cardiac disease (i.e. cardiomyopathy, atrial fibrillation, complicated valvular or congenital heart disease) or significant risk factors for cardiovascular disease. Safer and more effective methods should be offered.

It is well established that CHC users are at an increased risk of VTE compared with non CHC users. Third generation pills appear to have the highest risk of VTE. Progestogens modify the thrombogenic effects of oestrogens in CHC and this explains the differences seen in VTE rates between pills. However, it should be remembered that the absolute risk of VTE is still small especially when compared to the risk during pregnancy or postpartum.

Women with thrombogenic mutations (i.e. factor V Leiden, prothrombin mutation, protein S, protein C and antithrombin

### Mode of action and effectiveness of contraception

Method	Primary mode of action	Typical use failure (% of women experiencing an unintended pregnancy in the first year of use)	Perfect use failure (% of women experiencing an unintended pregnancy in the first year of use)
Progestogen only implant	Ovulation inhibition	0.05	0.05
Sterilisation			
Male	Division or occlusion vas deferens	0.15	0.15
Female	Tubal occlusion	0.5	0.5
Intrauterine contraception			
IUS	Changes to endometrium and cervical mucus prevent fertilization and implantation	0.2	0.2
IUD	Copper toxic to sperm	0.8	0.6
Depo-provera	Ovulation inhibition	6	0.2
Combined hormonal contraception (pills, patch, ring)	Ovulation inhibition	9	0.3
Progestogen only pill	Ovulation inhibition (desogestrel pills) Cervical mucus changes ('traditional' pills)	9	0.3
Diaphragm	Barrier	12	6
Condom			
Male	Barrier	18	2
Female	Barrier	21	5

**Table 2**

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