TWO of the most commonly used contraceptives in the UK are condoms and “the pill”. This is due to their availability but is also related to a lack of awareness of other methods among users and healthcare professionals. When confronted with a request for contraception, healthcare professionals should ensure that they cover all the options and that the client leaves with a method that is fully suited to her needs. Consider the three case studies on this page.

Long-acting methods of contraception were covered in part 1 of this series of articles. This article focuses on short-acting reversible contraception (SARC).

Oestrogen plus progestogen

“The pill” was developed in the 1950s and initially contained relatively large doses of both oestrogen and progestogen, which resulted in a high rate of thrombosis. We now know that low dose oestrogens (between 15 and 35µg) prevent ovulation in most cycles while still providing cycle control, with a monthly, usually light bleed and little intermenstrual bleeding.

Combined contraceptive pill

There are over 20 types of combined oral contraceptive pill (COCP) to choose from in the UK. They work primarily by preventing ovulation. With perfect use, failure is of the order of less than one in 100 in one year of use. However, in reality, this increases to approximately five in 100 because people are not perfect pill takers.

In addition to good cycle control, non-contraceptive benefits include reduced dysmenorrhoea and menorrhagia, reduced incidence of premenstrual tension, fewer symptomatic fibroids and non-pathological ovarian cysts, a reduction in the incidence of benign breast disease (eg, fibrocystic disease) and ovarian and endometrial cancers, and a reduced risk of pelvic inflammatory disease. COCPs can also reduce the risk of colorectal cancer.

Major adverse events with combined oral contraceptives include thrombotic events, such as deep vein thrombosis and stroke, due to the oestrogen content. The incidence of these has been variously reported as between 15 and 60 in 100,000, compared with a base rate of five per 100,000 in the general population and 60 in 100,000 in pregnancy. This increased incidence leads to the avoidance of use of oestrogen-containing contraception in women with other risk factors for thrombosis, such as hypertension, migraine with aura, family or personal history of clotting disorders or thrombotic events, smoking and high body mass index.

Prescribers should use the UK medical eligibility criteria for contraceptive use (adapted from World Health Organization guidelines) to decide whether use of a particular contraceptive is acceptable. For example, some conditions, such as obesity and hypertension, and multiple risk factors for cardiovascular disease (eg, diabetes and smoking) are

Case studies

Case 1 Jenna is 16 years old and started using Nexplanon six months ago. She has vaginal bleeding most days, which is light but annoying. She has recently changed partner and experiences pain during intercourse and postcoital bleeding.

Case 2 Lucy, aged 24 years, is taking Microgynon but she regularly forgets to take it and wants a more reliable method. She does not want to start a family for at least five years because she is still in full-time education.

Case 3 Anna is 48 years of age and has had an intrauterine contraceptive device in place for the past 10 years. She has heavy menstrual blood loss and is becoming anaemic. She has no contraindications to oestrogen, is a non-smoker and is in a monogamous relationship. She needs contraception until the menopause. She does not want irregular bleeding or no bleeding.

Suggested actions on p4.
contraindications to using COCPs.

Research has indicated a difference in the incidence of venous thromboembolism between COCPs containing different progestogens, and, recently, according to data from Denmark, between older COCPs and the transdermal patch and the vaginal ring. However, this is controversial because the incidence of thromboembolism is low. Moreover, experts have pointed out flaws in the recent Danish study, one of the main concerns being that it did not control for factors such as new starters — most venous thromboembolism (VTE) happens in the first six months after exposure. It is, therefore, still reasonable to advise that all these preparations are equally risky in terms of thrombosis. Women using any of these preparations and travelling for long periods may benefit from wearing compression hose to prevent deep vein thrombosis.

There have been worries about an increase in breast cancer for users of combined hormonal contraception in the past. These have been largely dispelled and, recently, according to a 2003 Cochrane review it is not caused by COCPs. Women should be given full instructions on how to take the pill, including what to do if pills are missed. The principle of most COCP regimens is to take 21 active pills and then have a seven-day pill-free interval (or seven days of placebo tablets), during which time contraceptive efficacy is maintained (providing the next packet is started on time). Three or four days into the pill-free interval there is usually a withdrawal bleed. Each pill should be taken at roughly the same time each day.

A pill is only classed as “missed” if it is over 24 hours late. Furthermore, the risk of reduced contraception depends on the number of pills missed (see Panel 1).

Because the main mechanism of action is to prevent ovulation, if the COCP is started early enough in the cycle (ie, on days 1 to 5) it will do this for the first cycle and efficacy is immediate. The COCP can be started at other times in the cycle (providing there is a reasonable chance that the woman is not pregnant) but barrier methods should be used for the first seven days of pill taking.

One preparation, Qlaira ▼ (varying quantities of estradiol and dienogest, estradiol-only tablets and placebo), does not have a pill-free interval and missed pill rules are slightly different (see Panel 1). The SPC for Qlaira specifies that a pack should be started on the first day of menstrual bleeding.

Potential enzyme inducers significantly reduce the effectiveness of the COCP during use as well as for up to four weeks after their use — in such cases an injectable or intrauterine progestogen, or a non-hormonal method of contraception, would be more suitable. Potent enzyme inducers include carbamazepine, modafinil, nelfinavir, nevirapine, oxcarbazepine, phenytoin, phenobarbital, primidone, ritonavir, St John’s wort, topiramate, rifabutin and rifampicin. Antibiotics that are not enzyme-inducers are now thought not to affect oestrogen-based contraception. Much attention is given to interactions reducing contraceptive efficacy but it should not be forgotten that COCPs can also reduce or potentiate the efficacy of medicines (eg, lamotrigine and ciclosporin, respectively).

**Panel 1: Missed Pill Rules**

**COCPs** With the combined oral contraceptive pill, two or more pills must be missed for there to be a risk of ovulation. Seven days of pill taking are needed to reinstate contraceptive efficacy (ie, if a woman is at the end of a packet, she should not have a pill-free break) and barrier methods should be used during this time.

Note that, for Qlaira missing only one pill can lower protection. The missed pill interval is 12 hours and nine days of extra precautions are required if a pill has been missed.

**POPs** The older progestogen-only pills have a three-hour window for pills to be taken (12 hours for Cerazette). Only one missed pill is required for contraceptive failure. Two more pills need to be taken to reinstate contraceptive efficacy. Although some manufacturers advise that a barrier method should be used for the next seven days, advice from the Faculty of Sexual and Reproductive Healthcare is that additional contraception is needed for two days only.

**Antibiotics that are not enzyme-inducers are now thought not to affect oestrogen-based contraception**

**Combined contraceptive patch**

The contraceptive patch (Eva) releases oestrogen and progestogen for transdermal absorption. These avoid first pass metabolism so there are possibly fewer drug interactions. Patches can be put on any clean, dry, non-hairy area of skin, away from the breasts. Recommended areas are the buttocks, abdominal area, upper arms or upper back.

Patches are changed weekly, with a seven-day patch-free interval every three weeks. There is 48 hours’ grace if the patch change day is forgotten (ie, they will work for up to nine days). However, if there is more than 24 hours delay in applying the patch at the start of a new cycle, additional contraception is required for seven days.

Because Evra contains oestrogen, the same contraindications as for COCPs apply. Some women notice skin irritation or allergy to the patch. The patch should be worn continually regardless of activity, and should not come off with showering, saunas or swimming. If a patch starts to peel off, it must be replaced with another. If a patch is detached for more than 24 hours (or if the woman is unaware when it became detached) a new patch can be applied and this becomes day 1 of a new cycle. Additional contraception is required for seven days.

**Vaginal ring**

The combined contraceptive vaginal ring (NuvaRing) is intended for self insertion. The ring releases oestrogen and progestogen into the vagina for three weeks, and then is removed. After a week’s break, a new ring is inserted. If inserted on the first day of menstrual bleeding, contraceptive protection is immediate. The patient information leaflet gives information about protection if the ring is inserted on other days or if the woman is switching from another form of contraception.

NuvaRing works in the same way as the COCP. As far as we are currently aware, its safety profile is similar (see comment above regarding recent research); the only differences are local side effects, such as vaginal irritation, and problems with expulsion. If the ring is expelled and remains
outside the vagina for more than three hours, contraceptive protection may be lost. NuvaRing requires cold chain storage (2-8°C) before dispensing. Once dispensed, rings may be stored below 30°C but must be used within four months. In my trust it is considered good practice not to prescribe more than three rings at a time in case they are not stored in a refrigerator.

**Progestogen-only pill**

Progestogen mainly makes cervical mucus hostile to sperm and renders the endometrium unsuitable for implantation. Contraindications are not as extensive as with the COCP so progestogen-only contraceptives — Cerazette, Femulen, Micronor, Norgeston and Noriday — are an option for many women for whom COCPs are unsuitable. However, the failure rate is a bit higher than with COCPs. Contraindications include current or past breast cancer (no evidence of recurrence for five years), current thromboembolism and on anticoagulation therapy, gestational trophoblastic neoplasia with abnormal human chorionic gonadotropin and various severe liver conditions. If a woman develops ischaemic heart disease or stroke for the first time on a progestogen-only pill, this method should be discontinued.

In the UK, there are two types of progestogen-only pill (POP) or “mini-pill”. The older type (norethisterone, ethynodiol, levonorgestrel) works primarily by thickening cervical mucus, and by thinning the endometrial lining. Some also prevent ovulation in some women. Desogestrel (Cerazette) works primarily by preventing ovulation.

If a POP is started between day 1 and day 5 of the cycle, the contraceptive effect is immediate. It can also be started at any time in the cycle (providing there is no risk of pregnancy) but, in this case, 48 hours of additional protection is required. The POP is taken continuously without any breaks, even during menstruation, and should be taken at the same time each day (see Panel 1 for missed pill rules). If a pill is vomited within two hours, another should be taken. If continuous vomiting or severe diarrhoea occurs, barrier methods must be used for the length of the illness and for 48 hours after because a POP must be taken for two days for efficacy. Like COCPs, POPS interact with potent enzyme inducers. If an enzyme inducer is used, a POP is not suitable as a method of contraception for the duration and for at least four weeks afterwards.

**Switching between methods**

Panel 2 gives a brief comparison of hormonal short-acting contraceptives. For various reasons women may wish to change their method of contraception. Many patient information leaflets will advise finishing the last active tablet in the pack of a COCP or, for switching from a POP, waiting until the first day of a period. However, in general, any hormonal method may be switched straight away without extra precautions if that method has been used properly. If switching from a non-hormonal method to a hormonal method, seven days of extra precautions must be used (two days for POPS). If removing an intrauterine contraceptive device, abstinence or starting another method of contraception seven days before the removal is recommended unless the device is removed with menses.

**Non-hormonal methods**

Pharmacists may be asked about other methods of short-acting reversible contraception. These include diaphragms, spermicides and fertility awareness (see Panel 3).

**Barrier methods**

Although male condoms are the most popular barrier method, there are several female barriers available, including diaphragms, cervical caps, contraceptive sponges and condoms. The male and female condoms (eg, Femidom) are the only recommended methods for reducing risk of sexually transmitted infection. The other barrier methods do not protect the whole area so cannot be recommended for this purpose. Female barrier contraceptives have relatively high failure rates so may not be appropriate for people for whom an unintended pregnancy is unacceptable. Cervical caps are rarely used in the UK now because of this.

**Spermicides**

Although some people use spermicides as a sole method of contraception, they are intended for use with barrier contraceptives. The spermicide nonoxynol-9 has been shown in trials to increase the transmission of HIV (human immunodeficiency virus) due to mucosal microabrasions caused by the chemical. Hence the use of spermically lubricated condoms is no longer recommended.

**Fertility awareness**

Because ovulation occurs only once per cycle, there is an infertile phase following ovulation and

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**Panel 2: Hormonal Short-Acting Contraception**

<table>
<thead>
<tr>
<th>Method</th>
<th>Combined pill</th>
<th>Vaginal ring</th>
<th>Patch</th>
<th>Progestogen-only pill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfect use failure rate</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td><strong>Advantages</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menstrual benefits; protects against some cancers, ovarian cysts and benign breast disease</td>
<td>Probably similar to COCPs; aids compliance</td>
<td>Probably similar to COCPs; aids compliance</td>
<td>Can be taken by most women with contraindications to COCPs; daily pill taking affords user control</td>
<td></td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long list of contraindications; increases risk of thrombosis; easy to forget.</td>
<td>Similar to COCPs, also some vaginal effects</td>
<td>Similar to COCPs, some skin problems</td>
<td>Menstrual irregularities; short missed pill window; unsuitable for “chaotic” pill takers</td>
<td></td>
</tr>
</tbody>
</table>

**Panel 3: Non-Hormonal SARC**

<table>
<thead>
<tr>
<th>Method</th>
<th>Typical use failure rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condom</td>
<td>15%</td>
</tr>
<tr>
<td>Diaphragm</td>
<td>13–17%</td>
</tr>
<tr>
<td>Cervical cap</td>
<td>Up to 30%</td>
</tr>
<tr>
<td>Femidom</td>
<td>Up to 20%</td>
</tr>
<tr>
<td>Fertility awareness</td>
<td>Up to 30%</td>
</tr>
</tbody>
</table>
before menses. The phase during and just after menstruation can also be a low risk time but that depends on the length of sperm survival and the length of the cycle.

With an understanding of the menstrual cycle, the risks of conception at different times can be assessed. If a woman has a regular cycle, the length of the shortest cycle can be found and along with predictors of ovulation, such as basal body temperature, cervical secretions and position of the cervix, used to predict risks of pregnancy. If time is taken to teach this to a committed couple, this form of contraception can be 98 per cent successful. However, cycles can change with any hormonal input (eg, breastfeeding, birth and near menopause).

It is common to use barrier methods in conjunction with fertility awareness, so that “high risk” days can be avoided or at least protected. Spermicides or lubricants sometimes used with barrier methods may, however, alter the secretions in the vagina which are an important part of fertility awareness, so that “high risk” days can be avoided or at least protected. Spermicides or lubricants sometimes used with barrier methods may, however, alter the secretions in the vagina which are an important part of assessing the stage in the menstrual cycle.

Lactational amenorrhoea

If a mother is breastfeeding and amenorrhoeic, and her baby is under six months of age, the contraceptive effect as a result of this is approximately 95–98 per cent successful. However, a POP is often used during breastfeeding. For many years COCPs were contraindicated during breastfeeding, but now can be used six months postpartum. It may be used from six weeks if no other contraceptive method is suitable.

Withdrawal

Many couples, particularly those who are spacing a family or who have religious objections to other forms of contraception, use the withdrawal method. The practice of the penis being withdrawn from the vagina before ejaculation can be successful although it is not recommended, partially because the process may be incomplete, and because there may be sperm present in pre-ejaculate.

Accessibility and choice

For many years, nurses in contraception clinics and general practice have been prescribing short-acting hormonal contraception. From experience with emergency hormonal contraception, pharmacies are seen to be a useful source of advice and in many areas of the UK they are also part of schemes providing chlamydia testing, pregnancy testing and free condoms, particularly to young people. For this to be extended to providing the oral contraceptive pill, either as a pharmacy-only product or under a patient group direction, seems a logical progression. Pilots of pharmacy delivered prescription of the combined pill have taken place and there is no reason why this should not be extended to increase choice.

In this and the previous CPD article, I have attempted to present details of methods of contraception so that the reader will be able to inform women about the wide variety without prejudice, bearing in mind that different methods will suit a woman at different points in her life. It is incumbent upon healthcare professionals, to help women to make informed choices so that every pregnancy is a wanted pregnancy, and sexually transmitted infections becomes less of an issue.

References

1 British National Formulary. 7.3.1 Combined hormonal contraceptives. Available at www.bnf.org
3 Faculty of Sexual and Reproductive Healthcare. UK medical eligibility criteria for contraceptive use. Available at www.fsrh.org (Accessed on 5 October 2009).

Further reading

– The third article in this series looks at emergency contraception

Suggestions for case studies on p1

Case 1 This patient needs to be checked for STIs, particularly chlamydia, and examined to exclude pelvic inflammatory disease as well as other causes for her bleeding.

If this is all normal, a trial of a combined oral contraceptive pill for three months, taken continuously (if she does not have any contraindications for use), may settle her bleeding.

Case 2 Depo-Provera would be an option for this patient. If she has taken the pill consistently for seven days she will be covered contraceptivealy straight away. If not, she will need to use alternative contraception for seven days after the injection.

Case 3 This patient could try another long-acting reversible contraceptive such as the intrauterine system, Nexplanon or Depo-Provera but because these come with a possibility of irregular bleeding or amenorrhoea. An ideal choice would be a combined method, either the pill, patch or ring depending on her preference. She can use these until the age of 50 (after which COCPs should be avoided as there is greater risk of thrombosis), when she should switch to a progestogenous-only method until menopause.