Since their introduction in the 1960s, oral contraceptives have been rapidly accepted as an effective method of contraception, with over 100 million users worldwide. Lower-dose pills have been formulated over the years so that, for the majority, the Pill is extremely safe, often with added health benefits. Major risks related to Pill use are now also recognised so that women at particular risk can be identified and offered alternative contraception.

Combined oral contraceptives
In the UK combined oral contraceptives (COCs), containing both oestrogen and progestogen, are the most popular method of contraception for women under age 30. The most common oestrogen used is ethinyl estradiol (EE), in doses between 20 and 35µg.

Progestogens are classified according to their steroid structure and the timing of their introduction on to the market. The progestogen-dominant COCs contain the first- and second-generation progestogens norethisterone and levonorgestrel. These are derived from testosterone and tend to exhibit androgenic actions, counterbalancing the oestrogenic activity.

The third-generation progestogens desogestrel and gestodene have neutral androgenic or oestrogenic actions; norgestimate (the COC Cilest) acts mostly, but not exclusively, through conversion to levonorgestrel.

Drospirenone (the COC Yasmin) differs from other progestogens in COCs: it has very mild diuretic properties due to antimineralocorticoid activity. This may help to oppose the salt- and fluid-retaining effects of EE and so reduce symptoms of fluid retention. Drospirenone is also an antiandrogen, so the combination may be an alternative to cyproterone acetate for conditions such as polycystic ovarian syndrome (PCOS).

Dienogest is a progestogen with antiandrogenic activity of approximately one-third of that of cyproterone acetate. It is...
combined with estradiol valerate, a natural oestrogen that is metabolised to 17-beta-estradiol, the same hormone produced by the ovaries. This COC (Qlaira) has four different phases over 26 days delivering hormones in an oestrogen step-down and a progestogen step-up sequence, followed by two placebo pills. The next pack is started immediately, without a break. A potential advantage of the short two-day hormone-free interval is that it may lessen the likelihood of ‘withdrawal’ symptoms such as headaches.

The missed-pill advice is notably different from standard pills: if one pill is missed in the first 24 days, additional precautions are necessary for the next nine days. To avoid confusion, missed-pill instructions are printed on every pill pack.

Nomegestrol acetate is a potent progestogen with strong antgonadotrophic and mild antiandrogenic activity. It is combined with estradiol (as hemihydrate) as the COC Zoely in packs of 24 white active tablets and four yellow placebo tablets, hence sharing with Qlaira the advantage of a shortened pill-free interval. However, Zoely is a monophasic pill with the same advice for missed tablets as for COCs with EE. It is an effective contraceptive option, usually providing good cycle control.

Studies published in 1995 suggested that the type of progestogen affected the risk of venous thromboembolism (VTE); COCs containing desogestrel/gestodene might be associated with a higher risk of VTE compared to those containing levonorgestrel/norethisterone. Further debate followed in 2009 with the publication of data suggesting that COCs containing drospirenone were also associated with a higher risk of VTE.

High-quality prospective studies dispute these observations and show that for women using any COC the estimated risk increases to 9–10 per 10 000 woman-years. While this is higher than the background risk of a VTE in women of reproductive age not using COCs of around 4–5 per 10 000 woman-years, it is still much lower than the risk of VTE associated with pregnancy (29 per 10 000 woman-years) or, more significantly, postpartum (300~400 per 10 000 woman-years).1,2

If any difference exists, an apparent two-fold difference between levonorgestrel/norethisterone and desogestrel/gestodene/drospirenone Pills is most probably a worst-case scenario. However, the clinical effect is so small as to be almost negligible and it is worth remembering that the VTE risk associated with COC use is less than that associated with pregnancy and postpartum.3

The natural oestrogens in Qlaira and Zoely confer a neutral clotting profile compared to EE but whether that translates to better safety is not yet known. Until further data are available, the indications and contraindications are the same as for other COCs. Most formulations are monophasic, ie fixed doses are maintained throughout the 21-day pill-taking cycle. This is usually followed by a seven-day pill-free interval, during which there is a withdrawal bleed. Biphasic and triphasic preparations are less popular, but may be useful – once pathology has been excluded – for the control of persistent breakthrough bleeding that has not settled after at least three COC cycles.3

A number of studies have shown less spotting, breakthrough bleeding or amenorrhoea in triphasic versus monophasic COC users but no randomised trials exist to confirm this approach.4

**Mode of action**
Contraceptive efficacy is maintained by several mechanisms. The principal mode of action is to suppress folliculogenesis, inhibiting ovulation. Secondary mechanisms include:
- development of a suppressed endometrium that is unreceptive to implantation
- development of viscous cervical mucus that impedes sperm transport
- possible interference with gamete transport through the fallopian tubes and therefore interference with fertilisation.

**Efficacy**
The efficacy of a contraceptive method is expressed as the failure rate per 100 woman-years of exposure (Pearl Index).

The theoretical failure rate of COCs is extremely low, being 0.3 per 100 woman-years.5 However, poor adherence is a major factor in limiting effectiveness, particularly in younger users. Although up to four pills can be missed in the middle week of a pack without the need for emergency contraception, late starts are the main problem when the pill-free interval is extended beyond the usual seven days. Consequently the failure rate with typical use can be up to 9 per 100 woman-years (see Figure 1).5

**Advantages**
COCs provide a reversible and convenient method of contraception that is independent of intercourse.
Extended-cycle and continuous COCs are licensed in several countries and, although not currently available in the UK, tailoring regimens in this way is supported by the Faculty of Sexual and Reproductive Healthcare (FSRH). 10 Women using tailored regimens in this way is supported by the Faculty of Sexual and Reproductive Healthcare (FSRH). 10 Women using tailored regimens should be made aware that such use is off-licence. 11 Reducing the number of hormone-free days of bleeding and spotting from the first cycle of use, with 80–100 per cent of women experiencing amenorrhoea by 10–12 months of use.12

Principal side-effects

Breakthrough bleeding is common in early use. In most cases this settles with time, although missed pills can be a common cause. Further evaluation, particularly exclusion of sexually transmitted infections, pregnancy and gynaecological pathology, is indicated if breakthrough bleeding persists or develops for the first time in established users.

Other side-effects are often specific to the relative excess of oestrogen or progestogen in different formulations. Symptoms of nausea, fluid retention and increased noninfective vaginal discharge can indicate a relative excess of oestrogen. This is usually resolved by changing to a progestogen-dominant combined pill.

Similarly, progestogenic symptoms of vaginal dryness, depression, acne and loss of libido may respond to an anti-androgenic combined pill.

Side-effects are mostly limited to the first few cycles of use, so women should be advised to persevere for at least three cycles before considering a different formulation. Reassurance and adequate counselling can usually prevent unnecessary discontinuation and enhance adherence.

Extended-cycle and continuous COCs are licensed in several countries and, although not currently available in the UK, tailoring regimens in this way is supported by the Faculty of Sexual and Reproductive Healthcare (FSRH).10 Women using tailored regimens should be made aware that such use is off-licence.11 Reducing the number of hormone-free days improves contraceptive efficacy and results in greater improvement in menstrual-associated symptoms compared to cyclical regimens.

Clinical trials show that there is an initial increase in unscheduled bleeding and spotting days with extended-cycle oral contraceptive use, but an absolute decrease in total days of bleeding and spotting from the first cycle of use, with 80–100 per cent of women experiencing amenorrhoea by 10–12 months of use.12

Principal risks

COCs have been the subject of intense research since their introduction. The results of these studies confirm their overall safety but have also highlighted some important risks relevant to a minority of users.

VTE Compared to nonusers the risk of VTE with use of COCs is approximately doubled, although the absolute risk is very low. First-time users are of more concern than continuing users since any excess risk of VTE is greatest in the first few months of starting or restarting after a break of more than one month as those with a genetic predisposition are ‘unmasked’.1

Many factors further increase the risk of VTE, including smoking, hypertension and diabetes, as well as obesity.13,14 These should be taken into consideration when deciding which is the most suitable method of contraception, and COCs should be prescribed with caution to obese women (BMI >35).9 VTE risks are also much higher in women who are carriers of hereditary thrombotic conditions.14,15

• Practical prescribing. Given that it confers the lowest associated risk of VTE and is the cheapest, a levonorgestrel-containing pill is preferred as the normal ‘starter’ COC. However, any COC can be used at the request of the woman or to control side-effects.

Based on the available evidence of risks, the FSRH has developed the UK medical eligibility criteria (UKMEC), based on WHO criteria, for use of the different contraceptive methods available (see Table 1). A thrombophilia screen is necessary only if a close blood-relative has had a VTE under the age of 45 without clear precipitating factors. If the thrombophilia screen is positive, COCs remain contraindicated (UKMEC 4).

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>no restriction on use</td>
</tr>
<tr>
<td>2</td>
<td>advantages of using method generally outweigh the theoretical proven risks</td>
</tr>
<tr>
<td>3</td>
<td>theoretical or proven risks usually outweigh the advantages</td>
</tr>
<tr>
<td>4</td>
<td>unacceptable health risk if contraceptive method is used</td>
</tr>
</tbody>
</table>

Table 1. UKMEC criteria definitions for contraceptive use9

An extensive body of evidence has established several non-contraceptive benefits of COCs including better cycle control, improved premenstrual symptoms, acne, dysmenorrhoea, heavy menstrual bleeding and ir-iron-deficiency anaemia, and reduction in ovarian cysts, benign breast disease and possibly pelvic inflammatory disease (PID).6,7 Their use is associated with a 40–50 per cent reduction in risk of ovarian, endometrial and possibly, but to a lesser degree, colorectal cancer.8 If used by women over age 40, there may be reduced risk of post-menopausal hip fracture.9

Practical prescribing

Given that it confers the lowest associated risk of VTE and is the cheapest, a levonorgestrel-containing pill is preferred as the normal ‘starter’ COC. However, any COC can be used at the request of the woman or to control side-effects.

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Table 2. Contraindications to COC use (UKMEC 4)9

<table>
<thead>
<tr>
<th>Contraindications</th>
</tr>
</thead>
<tbody>
<tr>
<td>breast feeding &lt;6 weeks postpartum</td>
</tr>
<tr>
<td>smoking ≥15 cigarettes per day in a woman ≥35</td>
</tr>
<tr>
<td>BP ≥160/95mmHg</td>
</tr>
<tr>
<td>current or past history of VTE</td>
</tr>
<tr>
<td>current or past history of stroke</td>
</tr>
<tr>
<td>current or past history of ischaemic heart disease</td>
</tr>
<tr>
<td>secondary Raynaud’s with lupus anticoagulant</td>
</tr>
<tr>
<td>migraine with aura or other focal neurological symptoms</td>
</tr>
<tr>
<td>current breast cancer</td>
</tr>
<tr>
<td>hepatocellular adenoma or malignant liver tumours</td>
</tr>
<tr>
<td>systemic lupus erythematosus (SLE) with positive or unknown antiphospholipid antibodies</td>
</tr>
<tr>
<td>complicated valvular heart disease (pulmonary hypertension, atrial fibrillation, history of subacute bacterial endocarditis)</td>
</tr>
<tr>
<td>known thrombogenic mutations</td>
</tr>
<tr>
<td>diabetes with evidence of vascular involvement or ‘opathies’</td>
</tr>
<tr>
<td>active viral hepatitis</td>
</tr>
<tr>
<td>severe (decompensated) cirrhosis</td>
</tr>
<tr>
<td>major surgery with prolonged immobilisation</td>
</tr>
</tbody>
</table>
The COC remains relatively contraindicated (UKMEC 2/3) for a woman with a positive first-degree family history and negative test results, since currently unidentified thrombophilias may exist.

Alternatives include all progestogen-only methods since there is no evidence that contraceptive doses of progestogens increase the risk of VTE.\textsuperscript{16}

Arterial thromboembolism MI is not increased in healthy COC users compared to nonusers. Age, smoking, hypertension, diabetes, obesity and family history are additional risk factors, increasing risk.

Limited data suggest that, in women with risk factors for arterial disease, the increased risk of MI is significant in users of progestogen-dominant COCs and may be less with oestrogen-dominant COCs.\textsuperscript{17} This is in keeping with the theory that, although oestrogen-dominant pills increase thrombotic risks, they may have some beneficial effects on atherosclerotic risks compared to progestogen-dominant pills.\textsuperscript{18}

Haemorrhagic stroke is not increased in healthy COC users. In contrast, COC use is associated with a two-fold increased risk of ischaemic stroke, which translates to an additional 4.1 ischaemic strokes per 100 000 nonsmoking normotensive women using low-dose COCs, or one additional ischaemic stroke per year per 24 000 such women.\textsuperscript{19} Hypertension and smoking are the most important independent risk factors for both conditions.

There is also evidence that migraine, particularly with aura, increases the risk of ischaemic stroke.\textsuperscript{20}

• Practical prescribing. Blood pressure must be measured before and at every visit during COC use. Mild hypertension (140–159/90–94mmHg) does not in itself absolutely contraindicate COCs unless other arterial risk factors are present. A lipid screen is not routinely recommended but should be tested if there is a known lipid disorder or arterial disease in a close relative under age 45. Smoking should be discouraged.

Breast cancer A collaborative meta-analysis of 54 epidemiological studies suggested a 24 per cent increased risk of breast cancer in women using COCs vs nonusers.\textsuperscript{21} In contrast, data from the RCGP’s oral contraception study, which included 339 000 woman years of observation for never users and 744 000 woman years for ever users, showed no increased risk of breast cancer in ever vs never users.\textsuperscript{22}

Use of oral contraceptives by women with a family history of breast cancer does not appear to be associated with an increased risk of breast cancer over and above the background risk.\textsuperscript{23} The average woman has a 1 in 625 risk of developing breast cancer up to age 35, rising to 1 in 56 by age 50. A woman with two first- or second-degree relatives with breast cancer diagnosed under age 60 has a risk two to three times higher than the background risk.

Although these data are reassuring, an increased risk in younger women cannot be ruled out, particularly those with BRCA1 or BRCA2 mutations. A population-based case-control study assessed COC use as a risk factor in Caucasian carriers
and noncarriers of these mutations. Use of low-dose COCs was not associated with an increased risk of breast cancer in either BRCA2 carriers or noncarriers. Furthermore, the results suggest a reduced risk of breast cancer in BRCA1 carriers.

In contrast, results from the retrospective international BRCA1/2 Carrier Cohort Study suggested that ever users of COCs had an increased risk of breast cancer – adjusted hazard ratio 1.47; 95% CI 1.16–1.87. Duration of use before first full-term pregnancy further increased risk.

Use of low-dose COCs may also be associated with reduced risk of ovarian cancer in BRCA1 and BRCA2 carriers.

**Practical prescribing.** Women with a family history of breast cancer can use COCs (UKMEC 2) but should be counselled about the increased background risk. Further, there are the benefits of COCs to consider, in particular reduced risk of ovarian, colon and endometrial cancer and PID, as well as relief from many period-related problems.

The lowest dose of oestrogen that provides good cycle control is recommended, reassessed at least every five years. Women can be reassured that, should they develop breast cancer while taking COCs, the prognosis is likely to be better than for women not using hormonal contraception.

### Table 3. Enzyme-inducing drugs that reduce the efficacy of COCs and POPs

<table>
<thead>
<tr>
<th>Antiepileptic</th>
<th>Carbamazepine</th>
<th>Eslicarbazepine</th>
<th>Oxcarbazepine</th>
<th>Perampanel (≥12mg/day only)</th>
<th>Phenobarbital</th>
<th>Phenytoin</th>
<th>Primidone</th>
<th>Rufinamide</th>
<th>Topiramate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antibiotic</strong></td>
<td>Rifabutin</td>
<td>Rifampicin</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Antidepressant</strong></td>
<td>St John’s wort</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Antifungal</strong></td>
<td>Griseofulvin</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Antiretroviral</strong></td>
<td>Efavirenz</td>
<td>Nevirapine</td>
<td>Ritonavir and ritonavir-boosted protease inhibitors (darunavir, nelfinavir, fosamprenavir, lopinavir, saquinavir, tipranavir)*</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*except ritonavir-boosted atazanavir – COC containing ≥30µg EE can be used
For women who are carriers of BRCA mutations current guidance for use of COCs is UKMEC 3; although COC use protects against ovarian cancer in BRCA mutation carriers, it is not known where the balance of risk lies.

Cervical cancer The risk of cervical cancer is strongly related to the lifetime number of sexual partners, age at first intercourse, smoking and duration of use of oral contraceptives. COCs appear to be only a weak co-factor with smoking, and the presence of certain types of the human papilloma virus (HPV) is more important.

* **Practical prescribing.** Women using COCs should be counselled against smoking and to use condoms to protect against sexually-transmitted infections (STIs) and to avail themselves of the cervical screening programme. COCs can be started and continued during treatment for cervical intraepithelial neoplasia (CIN).

Other cancers Benign and malignant liver tumours are more common in women using COCs but both conditions remain rare.

**Principal contraindications**

Several conditions are considered to represent an unacceptable health risk if COCs are used (UKMEC 4; see Table 2). In addition, the presence of multiple relative-risk factors usually contraindicates COCs.

These contraindications affect only a minority of prospective users. Most of the above risks are related to the oestrogen component of COCs, so progestogen-only and nonhormonal methods are suitable alternatives.

**Principal interactions**

Drugs that induce hepatic enzymes (see Table 3) reduce the efficacy of COCs.

* **Practical prescribing.** Consider alternative contraception such as injectable contraceptives, the intrauterine system (IUS) or nonhormonal methods.

Medroxyprogesterone (Depo-Provera) is the preferred hormonal method of contraception in women taking enzyme-inducing drugs; it should be given at the usual 12-weekly interval since the rate of clearance of the drug is unchanged by enzyme inducers. If COCs are preferred, at least 50µg of EE (maximum 70µg EE) is necessary to ensure contraceptive action; efficacy may be further increased by extended use and shortening the pill-free interval to four days or taking the pill continuously.

Rifampicin and rifabutin (Mycobutin) are such powerful enzyme inducers that alternative contraceptive methods should be used. Even short courses of two days reduce contraceptive efficacy for a month, and longer courses for up to two months, after stopping.

Contraceptive effectiveness of COCs is not affected by co-administration of most broad-spectrum antibiotics.

Lamotrigine efficacy is reduced during COC use, with increased risk of seizures during pill-taking and increased lamotrigine levels during the pill-free interval; with lamotrigine monotherapy, use of COCs is UKMEC 3. COCs can be used if lamotrigine and sodium valproate are taken together, as no reduced effect occurs with this combination.

**Table 4.** Patients are advised to consult their doctor straight away if they are taking the COC and experience any of these symptoms

**Progestogen-only pills**

Progestogen-only pills (POPs) contain the progestogens desogestrel, levonorgestrel (Norgeston) or norethisterone. They are taken every day, without a break.

**Mode of action**

The main mode of action of traditional POPs is to thicken cervical mucus and thus prevent sperm penetration. They also have an effect on the endometrium, reducing uterine receptivity. Unlike COCs, ovulation is inhibited in only 15–40 per cent of cycles, which accounts for the reduced efficacy. In contrast, the primary mode of action of the desogestrel POP is ovulation inhibition, enhancing efficacy.

**Efficacy**

POPs can be very effective with failure rates for perfect use as low as 0.3 per 100 woman-years during the first year of use. More typical use is associated with a failure rate similar to COCs. Contraceptive efficacy improves with age as natural fertility declines.

The main cause of failure is missed pills. If a traditional POP is taken more than 27 hours after the last dose, or desogestrel is taken more than 12 hours late, contraceptive protection is reduced.

**Advantages**

POPs provide a reversible and convenient method of contraception, independent of intercourse and without oestrogen-associated risks. Most women for whom EE is contraindicated can use them.

**Principal side-effects**

Menstrual irregularities, from breakthrough bleeding to amenorrhoea, are common. A few women develop functional ovarian cysts. If ovulation is not inhibited, ectopic pregnancy is more likely; anovulant methods are the contraceptives of choice if there is a past history of ectopic pregnancy.
• Practical prescribing. Breakthrough bleeding, once pathology or user failure has been excluded, may resolve with time but otherwise a change to a different POP is worth considering. Amenorrhoea can cause concern about possible pregnancy but, once this has been excluded, actually suggests better efficacy from an anovulant effect.

Principal risks
The only relevant risk relates to breast cancer. Although likely to be minimal, the risk of POPs and breast cancer is uncertain since studies have failed to reach statistical significance due to the small number of users.

Principal contraindications
Only current breast cancer contraindicates POP use (UKMEC 4).10

Principal interactions
Hepatic enzyme-inducing drugs reduce the efficacy of POPs (see Table 3).

• Practical prescribing. POP users starting enzyme-inducing drugs should use alternative contraception such as medroxyprogesterone, the intrauterine system (IUS) or nonhormonal methods.

Place of COCs and POPs in contraception
COCs are the most popular method of contraception for young women in the UK. They have the advantage of being effective, reversible and independent of intercourse. For the majority of users they are very safe with added health benefits, and can be used by healthy women right up to the menopause.

If 1 pill has been missed (48–72 hours since last pill in current packet or 24–48 hours late starting first pill in new packet)

Continuing contraceptive cover
The missed pill should be taken as soon as it is remembered
The remaining pills should be continued at the usual time

Minimising the risk of pregnancy
Emergency contraception (EC) is not usually required but may need to be considered if pills have been missed earlier in the packet or in the last week of the previous packet

If 2 or more pills have been missed (>72 hours since last pill in current packet or >48 hours late starting first pill in new packet)

Continuing contraceptive cover
The most recent missed pill should be taken as soon as possible
The remaining pills should be continued at the usual time
Condoms should be used or sex avoided until 7 consecutive active pills have been taken; this advice may be overcautious in the second and third weeks, but the advice is a back-up in the event that further pills are missed

Minimising the risk of pregnancy

If pills are missed in the first week (pills 1–7)
EC should be considered if unprotected sex occurred in the pill-free interval or in the first week of pill-taking

If pills are missed in the second week (pills 8–14)
No indication for EC if the pills in the preceding 7 days have been taken consistently and correctly (assuming the pills thereafter are taken correctly and additional contraceptive precautions are used)

If pills are missed in the third week (pills 15–21)
Omit the pill-free interval by finishing the pills in the current pack (or discarding the placebo tablets) and starting a new pack the next day

Figure 2. Advice for women missing COC pill (except Qlaira); from Faculty of Sexual and Reproductive Healthcare Clinical Effectiveness Unit. Combined hormonal contraception. London: FSRH, 2011
Prescriber | September 2013

Although it is unlikely that COCs are overprescribed, women are often not counselled about the full range of contraceptive methods available, particularly the long-acting reversible contraceptives (LARCs), which are associated with lower failure rates. Women starting COCs must be counselled about potential side-effects and the importance of adherence. A review three months after initiating the method should be scheduled in order to assess the method and consider if a change is necessary.

Women should also be alerted to the list of symptoms in the Family Planning Association (FPA) leaflets for which urgent medical attention is recommended and which may require immediate cessation of COCs (see Table 4). Emergency contraception may be indicated if there is a risk of pregnancy.

If adherence is an issue, consider the combined contraceptive patch (Evra), which is changed weekly for three out of every four weeks. Another option is the combined vaginal ring (NuvaRing), which is used continuously for three out of every four weeks. Risks and benefits are otherwise the same as for COCs.

For a minority of women risks outweigh benefits and alternative methods of contraception are recommended. These include the POP, which also benefits from being effective, reversible and independent of intercourse. In younger women traditional POP efficacy is lower than for the COC, but both are of similar efficacy in women over 35. However, the anovulant desogestrel POP has similar, if not greater, efficacy than the COC given the absence of the pill interval. The POP can be used in most conditions that contraindicate oestrogen-containing contraceptives, and by breast-feeding women.

Despite their popular use, oral contraceptives are only one of a number of different contraceptive methods. Of greater efficacy are the user-independent LARCs, such as the IUD, IUS and implants (see Figure 1). Each of these methods has different advantages and disadvantages and it is important that women are aware of all the options available to them. The FPA leaflets are very helpful aids to discussion.

New developments are constantly being marketed, which will give women even more choice.

References
11. FSRH, Statement from the FSRH Clinical Standards Committee, the Clinical Effectiveness Committee and the Associate Members’ Working Group on the prescription, administration or supply of contraceptive medicines for use outside the terms of their licences. FSRH 2009. Available at: http://www.fsrh.org/pdfs/JoinStatementOffLabelPrescribing.pdf

Figure 3. Advice for women who miss one or more of their POP pills; from WHO. Selected practice recommendations for contraceptive use. Second edition. Geneva: WHO, 2004 and 2008 update.
Prescription review

GPs in England wrote five million prescriptions for COCs in 2012 at a cost of £44.5 million, virtually the same as in 2011 but almost a quarter below the prescribing levels of 10 years ago.

Prescribing was dominated by preparations containing EE 30µg (75 per cent of COCs), followed by EE 35µg (13 per cent) and EE 20µg (9 per cent). Phased preparations made up less than 3 per cent of volume. Costs were proportionately similar.

Microgynon 30 remained the most frequently prescribed COC, accounting for about half of prescriptions for EE 30µg preparations and a quarter of costs, but it lost sales in the previous two years to Rigevidon (a less expensive but similar preparation).

COCs containing newer progestogens (desogestrel, gestodene, norgestimate, drospirenone, dienogest) made up 36 per cent of prescriptions but 62 per cent of costs. The most expensive COC brand in 2012 was Elevin (EE 30µg/levonorgestrel 150µg) with an NIC per item of £39.22, followed by Qlaira (£32.15), Yaz (EE 20µg, drospirenone 3mg; £28.86), Yasmin (£22.81) and Triadene (phasic EE, gestodene; £15.93).

<table>
<thead>
<tr>
<th>No. scrips (000s)</th>
<th>Cost (£000s)</th>
<th>Mean cost per scrip (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microgynon 30</td>
<td>1 893</td>
<td>8 329</td>
</tr>
<tr>
<td>Yasmin</td>
<td>699</td>
<td>15 942</td>
</tr>
<tr>
<td>Cilest</td>
<td>575</td>
<td>6 423</td>
</tr>
<tr>
<td>Rigevidon</td>
<td>275</td>
<td>805</td>
</tr>
<tr>
<td>Marvelon</td>
<td>200</td>
<td>2 003</td>
</tr>
</tbody>
</table>

Table 5. Number and cost of prescriptions for the top five COCs by volume in England, 2012

per cent of prescriptions but 62 per cent of costs. The most expensive COC brand in 2012 was Elevin (EE 30µg/levonorgestrel 150µg) with an NIC per item of £39.22, followed by Qlaira (£32.15), Yaz (EE 20µg, drospirenone 3mg; £28.86), Yasmin (£22.81) and Triadene (phasic EE, gestodene; £15.93).

Resources

Guidelines


Contraception for women aged over 40 years. Faculty of Sexual & Reproductive Healthcare. July 2010.


Prescriber articles


