Kyleena: a new five-year levonorgestrel-releasing IUS

STEVE CHAPLIN

Kyleena is a new levonorgestrel-releasing intrauterine system (IUS) with a small frame that is indicated for contraception for up to five years. This article discusses its properties, contraceptive efficacy and adverse effects.

KEY POINTS
- Kyleena is a levonorgestrel-releasing IUS that is intermediate in dose between Jaydess and Mirena
- It is licensed for long-term contraception
- It is of similar size to Jaydess but can be used for up to 5 years
- In one large, non-blinded clinical trial, Kyleena was as effective and as well tolerated as Jaydess
- Adverse effects are similar to those associated with Jaydess
- Kyleena costs £76

Women requiring contraception should be given information about and offered a choice of all methods, including long-acting reversible contraceptives (LARC). LARC options include copper IUDs, progestogen-only intrauterine systems (IUS), and progestogen-only injectable contraceptives and subdermal implants. Unlike oral contraceptive pills and barrier methods, the effectiveness of LARCs does not depend on daily concordance, and increased uptake of this type of contraception could help to reduce unintended pregnancy.1

The introduction of Kyleena brings to four the number of IUS devices that gradually release levonorgestrel over a period of years. Jaydess (which contains 13.5mg levonorgestrel) is licensed for contraception for up to three years; it releases 14µg per day levonorgestrel initially, decreasing to 5µg per day after three years. Levosert (containing 52mg levonorgestrel) releases 19.5µg per day initially, declining to 11.3µg per day during the fourth year; it should be removed after four years of use. Mirena (containing 52mg levonorgestrel) provides contraception for up to five years; it releases 20µg per day initially, declining to 10µg per day after five years.

Properties
Kyleena is a new IUS indicated for contraception for up to five years. Kyleena contains 19.5mg levonorgestrel, and initially releases 17.5µg per day levonorgestrel, decreasing to 7.4µg per day when due for removal after five years. Like Jaydess and Mirena, Kyleena is marketed by Bayer plc and it falls between them in dose: estimated mean serum levels of levonorgestrel over three years are 74.3ng/L with Jaydess, 114ng/L with Kyleena and 218ng/L with Mirena.2 Kyleena and Jaydess are similar in frame size and are smaller than Mirena and Levosert. The smaller frame size means that they may be easier to fit in nulliparous women.

Kyleena, like Jaydess, is licensed for long-term contraception only; Levosert is also licensed for the treatment of heavy menstrual bleeding and Mirena for idiopathic menorrhagia and protection from endometrial hyperplasia during estrogen-replacement therapy. All should be inserted within seven days of the onset of menstruation, immediately after first trimester abortion or, when used postpartum, not earlier than six weeks after delivery.

The four IUS devices share prescribing cautions and contraindications. All should be inserted using aseptic technique by healthcare professionals who have undergone training on the insertion procedure or who are experienced in IUS insertions. They have not been studied in women with renal or hepatic impairment but all are contraindicated in women...
with acute liver disease or liver tumour. They are also contraindicated in acute or recurrent pelvic inflammatory disease, uterine or cervical malignancy, uterine anomaly and in women with hormone-dependent tumours, e.g., breast cancer.

**Efficacy**

Kyleena was compared with Jaydess in a non-blinded randomised trial involving 2885 women (mean age 27 years, 39% nulliparous) in Europe and North and South America. The primary endpoint was the pregnancy rate after three years, as defined by the Pearl Index (number of pregnancies per 100 woman-years of use). A total of 1432 patients were allocated to Jaydess and 1453 to Kyleena. In this trial, up to two placements were attempted; placement was unsuccessful in six women with Jaydess and 10 women with Kyleena. Pooling together figures from both IUS devices, placement was successful on the first attempt for 96% of women and rated ‘easy’ by clinicians for 90%. Overall, 65% of participants experienced no or mild pain during placement; 27% rated the pain as moderate and 8% severe. However, a subsequent analysis found that 43% of nulliparous women experienced moderate pain and 15% experienced severe pain.

The three-year cumulative Pearl Index was 0.33 for Jaydess and 0.31 for Kyleena. Failure rates were similar during each year and for each device, and ranged from 0.2% to 0.4% per year over the three years. The Pearl Index was similar regardless of age, parity and body mass index. About 40% of women in each group discontinued IUS use before study completion, of whom just over 40% did so in the first year and 33% in the second year. Adverse effects accounted for approximately half of discontinuations and about 60% of these occurred in the first year. Mean numbers of bleeding or spotting days approximately halved over the first four months then declined more slowly over three years.

Three-quarters of randomised women completed a satisfaction survey at their final visit. Similar proportions using Jaydess and Kyleena stated they were somewhat satisfied/very satisfied with their IUS (95–96%) and their bleeding patterns (76–77%). The proportions expressing a wish to continue with their assigned IUS were 77% with Jaydess and 82% with Kyleena.

Women who had been randomised to receive Kyleena could opt to continue use for a further two years; 550 of the 870 (63%) who completed three years’ treatment did so. The five-year cumulative Pearl Index was 0.29. A further 22% of women discontinued use during the two-year period, of whom just over a fifth did so due to adverse effects. Frequent bleeding became less common and amenorrhoea more common over the five-year period (see Figure 1). Of the women who completed the satisfaction questionnaire after five years (number not reported), 99% said they were somewhat/very satisfied with Kyleena overall and 80% were somewhat/very satisfied with their menstrual bleeding pattern; 85% of women said they would choose to continue with Kyleena after the study.

**Adverse effects**

The nature and frequency of adverse events reported in trials, including expulsion and ectopic pregnancy, were similar for Jaydess and Kyleena and typical of levonorgestrel-releasing IUS devices. Approximately 5% of women in each group discontinued use due to disturbances in menstrual bleeding, including amenorrhoea. Over the five-year period, the most frequent adverse events associated with Kyleena that were considered treatment-related were ovarian cyst (16%), acne (10%), pelvic pain (6.3%), dysmenorrhoea (5.4%) and vaginal haemorrhage (5.0%).

**References**


**Declaration of interests**

None to declare.

Steve Chaplin is a medical writer specialising in therapeutics