First, we include advice that was issued ahead of the rest of the September 2019 issue, following new data advising healthcare professionals of data showing risk of breast cancer is increased during use of all types of HRT, except vaginal estrogens, and also showing that an excess risk of breast cancer persists for longer after stopping HRT than previously thought. See page 2 for more.

Second, we advise prescribers of fingolimod for multiple sclerosis of new contraindications in pregnancy and in women of childbearing potential not using contraception (page 6). These restrictions follow a review of post-marketing data suggesting increased risk of congenital malformations, including cardiac, renal, and musculoskeletal defects, in infants following in-utero exposure to fingolimod.

Next, we advise of the need for regular ophthalmologic monitoring in patients on pentosan polysulfate, indicated for use in bladder pain syndrome (interstitial cystitis). These recommendations follow rare cases of pigmentary maculopathy detected in patients using pentosan polysulfate, particularly those on long-term treatment at high doses. Patients on pentosan polysulfate should be advised to promptly seek medical advice in case of visual changes (page 9).

Finally, we remind healthcare professionals of the risk of neuropsychiatric reactions with the asthma medicine montelukast (Singulair). Prescribers should be alert for possible neuropsychiatric reactions in patients taking montelukast and consider carefully the benefits and risks of continuing treatment if they occur (page 11).
Hormone replacement therapy (HRT): further information on the known increased risk of breast cancer with HRT and its persistence after stopping

New data have confirmed that the risk of breast cancer is increased during use of all types of HRT, except vaginal estrogens, and have also shown that an excess risk of breast cancer persists for longer after stopping HRT than previously thought. Prescribers of HRT should discuss the updated total risk with women using HRT at their next routine appointment.

Advice for healthcare professionals:

- a new meta-analysis of more than 100,000 women with breast cancer has shown that some excess risk of breast cancer with systemic HRT persists for more than 10 years after stopping; the total increased risk of breast cancer is therefore higher than previous estimates (see key findings on page 3)
- prescribers of HRT should inform women who use or are considering starting HRT of the new information about breast cancer risk at their next routine appointment (see resources provided on page 4)
- only prescribe HRT to relieve post-menopausal symptoms that are adversely affecting quality of life and regularly review patients using HRT to ensure it is used for the shortest time and at the lowest dose
- remind current and past HRT users to be vigilant for signs of breast cancer and encourage them to attend for breast screening when invited

New study on the increased risk of breast cancer with HRT

Systemic hormone replacement therapy (HRT) is taken orally or applied under or via the skin (as gels or patches [transdermal]) for the relief of vasomotor or related symptoms of the menopause. For women with an intact uterus, progestogen is normally added to estrogen for the prevention of adverse endometrial effects such as hyperplasia and cancer.

On 30 August 2019, a new meta-analysis of participant data from the Collaborative Group on Hormonal Factors in Breast Cancer was published in The Lancet.¹ The analysis included 108,647 cases of breast cancer in prospective studies. The study included long-term follow-up of women who did not use HRT and those who discontinued HRT, mostly in the early 2000s. Among women with complete information, mean HRT duration was 10 years in current users and 7 years in past users.

Key findings of the study are provided in this article. Prescribers are asked to discuss the new information on the risk of breast cancer with women using or contemplating using HRT at their next routine appointment. The MHRA has also sent this advice to healthcare professionals in an alert via the Central Alerting System.

This article was published online on 30 August 2019, ahead of the rest of the September 2019 issue of Drug Safety Update, to enable healthcare professionals and patients to receive consistent information about risks with HRT.

Key findings:

- All forms of systemic HRT are associated with a significant excess incidence of breast cancer, irrespective of the type of estrogen or progestogen or route of delivery (oral or transdermal)
- There is little or no increase in risk with current or previous use of HRT for less than 1 year; however, there is an increased risk with HRT use for longer than 1 year
- Risk of breast cancer increases further with longer duration of HRT use
- Risk of breast cancer is lower after stopping HRT than it is during current use, but remains increased in ex-HRT users for more than 10 years compared with women who have never used HRT
- Risk of breast cancer is higher for combined estrogen-progestogen HRT than estrogen-only HRT
- For women who use HRT for similar durations, the total number of HRT-related breast cancers by age 69 years are similar whether HRT is started in her 40s or in her 50s
- The study found no evidence of an effect on breast cancer risk with use of low doses of estrogen applied directly via the vagina to treat local symptoms

Estimates of number of extra cases of breast cancer for 5 years HRT use starting around the time of menopause

In the UK about 1 in 16 never-users of HRT (about 63 per 1000) will be diagnosed with breast cancer between the ages of 50 years and 69 years.

Among women of average weight who start using systemic HRT from menopause in their 40s or 50s, and continue for 5 years, the extra number of cases of breast cancer by age 69 years is estimated from the study to be:

- around 1 extra case per 200 women (corresponding to about 5 extra cases per 1000 women) who use estrogen-only HRT
- around 1 extra case per 70 women (corresponding to about 14 extra cases per 1000 women) who use estrogen combined with progestogen for part of each month (sequential or cyclical HRT)
- around 1 extra case per 50 women (corresponding to about 20 extra cases per 1000 women) who use estrogen combined with daily progestogen HRT (continuous HRT)

The number of extra cases up to age 69 years is approximately double these values for women who use systemic HRT for 10 years compared with those who use HRT for 5 years.

A summary of the numbers of HRT-related breast cancers estimated from the new study\(^1\), together with other risks and benefits of HRT use, is provided in table 1.

Effect on risk by type of HRT

All types of oral or transdermal HRT are associated with a significant excess incidence of breast cancer.
The relative risk of breast cancer in women taking HRT is higher for combined estrogen-progestogen HRT than for estrogen-only HRT when compared with women who have never used HRT.

The risks of breast cancer for women who use estrogen combined with progestogen for part of each month (sequential HRT) are slightly lower than with estrogen plus daily progestogen (continuous HRT). However, the risks are unaffected by the type of estrogen or progestogen, including progesterone itself, or the route by which HRT is administered (oral or transdermal routes).

The study found no evidence of an effect on breast cancer risk with use of estrogen applied directly via the vagina (via cream, tablet, or a ring) to treat local symptoms.

**Effect on risk by age of initiation of HRT**
The risk of breast cancer depends on many factors, including age at menopause. Women who do not use HRT and who experience menopause between ages 40 and 50 years have a lower risk of breast cancer than women who experience menopause at a later age. However, in women who start HRT in their 40s, the number of HRT-related breast cancers diagnosed by age 69 years is similar to that in women who use HRT for a similar duration starting in their 50s. This is because women who have a menopause in their 40s have longer time as a current HRT-user plus ex-user before they are 69 years old.

It is not known if the increased risk of breast cancer with HRT use is similar for women who take HRT following a premature menopause (younger than age 40 years), or how their risk may be affected by any underlying conditions.

**Effect on risk by duration of HRT use**
Risk of breast cancer increases with duration of HRT use. For all types of HRT, relative risks of breast cancer are higher for women who use HRT for 5 or more years than for those who use it for 1–4 years of use.

The number of extra cases of breast cancer up to age 69 years in women taking HRT is approximately doubled with 10 years of HRT use compared with use for 5 years (both for combined estrogen and progestogen HRTs and estrogen-only forms).

There appears to be little or no increase in risk of breast cancer for current or past users of HRT if it is used for less than 1 year.

**Reminder for prescribers about licence recommendations for HRT**
HRT should only be initiated for relief of postmenopausal symptoms that adversely affect quality of life and should be continued only as long as the benefit in alleviating menopausal symptoms outweighs the risks associated with HRT use.

In all cases, a careful appraisal of all the risks and benefits should be undertaken before use. These should be reassessed regularly during use as a woman’s need for treatment and risk of adverse effects change over time.
A summary of the numbers of HRT-related breast cancers estimated from the new study,¹ plus a summary other key risks and benefits of HRT use, is provided in table 1.

Table 2 provides revised estimates of relative and absolute risks of breast cancer per 1000 women with 5 or 10 years of HRT use from age 50 years from the new study. The table also provides a reminder of relative and absolute risks per 1000 women of other key risks and benefit in terms of reduction in fracture risk.

Counselling patients about the updated information on risk of breast cancer with HRT
Prescribers of HRT should discuss the updated risks of breast cancer with women using HRT at their next routine appointment.

What can an individual woman do to reduce her risk?
- Using HRT for as short a time as possible will help reduce the overall risk
- There are no medical risks with stopping HRT, but symptoms may return especially if HRT is stopped suddenly. Gradually stopping treatment may help to reduce the chances of this
- Low-dose vaginal estrogens do not appear to increase breast cancer risk for women in whom this is a therapeutic option

The MHRA has produced an information sheet for women to assist healthcare professionals when providing counselling on the new information about risk of breast cancer with HRT (large print version also provided). This sheet can be used in discussions with women about the risks of HRT. It is expected this sheet will be used by healthcare professionals alongside table 1 that provides benefit and risk estimates for women for 5 years and 10 years use.

Patients should be encouraged to read the patient information leaflet (package leaflet) that accompanies their HRT since this provides information on other side effects and instructions for use.

Further information

First published online 30 August 2019.
Fingolimod (Gilenya▼): increased risk of congenital malformations; new contraindication during pregnancy and in women of childbearing potential not using effective contraception

Fingolimod is associated with an increased risk of major congenital malformations including cardiac, renal, and musculoskeletal defects, when used in pregnancy. Women of childbearing potential must use effective contraception during fingolimod treatment and for 2 months after discontinuation.

Advice for healthcare professionals:

New contraindication

- fingolimod increases the risk of major congenital malformations when used in pregnancy
- exposure in pregnancy is thought to lead to an estimated additional 2–3 cases major congenital malformation per 100 livebirths compared with the general population (a two-fold increase)
- fingolimod is contraindicated during pregnancy and in women of childbearing potential not using effective contraception

Management of women of childbearing potential before and during fingolimod treatment

- advise women that fingolimod increases the risk of congenital abnormalities and provide them with the new pregnancy-specific patient reminder card
- exclude pregnancy before starting fingolimod and repeat pregnancy testing at suitable intervals during treatment (depending on contraceptive used and personal circumstance – see guidance below)
- ensure that an effective form of contraception is used during treatment and for 2 months after discontinuation
- stop fingolimod 2 months before a pregnancy is planned and consider alternative treatments

Management if pregnancy exposed

- should a woman on fingolimod become pregnant, stop treatment immediately and refer to an obstetrician for close monitoring during pregnancy, including ultrasound assessments
- exposed pregnancies should be enrolled to the prospective registry for outcome monitoring

Background

Fingolimod (Gilenya) is a sphingosine 1-phosphate receptor modulator. It is authorised to treat highly active relapsing-remitting multiple sclerosis in patients aged 10 years and older whose disease has failed to respond to at least 1 disease-modifying therapy or where disease is severe and rapidly evolving (see full indication in Summary of Product Characteristics).
As of May 2019, more than 284,000 people with multiple sclerosis have been treated with Gilenya worldwide in clinical trials and routine clinical practice (more than 677,700 patient-years). In the UK, 9025 patients have received fingolimod since it was marketed in 2011.

### Risk of congenital malformations

At the time of licence of fingolimod in 2011, little clinical data were available about safety of use in pregnancy. The product information for fingolimod noted that animal data suggested a risk of foetal harm and therefore advised that women should not become pregnant while taking fingolimod. A registry was introduced to prospectively collect outcome data of any pregnancies exposed to fingolimod.

A recent EU review analysed post-marketing data, including from the registry, and concluded that fingolimod exposure in pregnancy is associated with a two-fold increase in the risk of congenital malformations compared with the observed rate of 2–3% in the general population reported by the European network of population-based registries for the epidemiological surveillance of congenital anomalies [EUROCAT]. Prospective data were included from 1,465 women exposed to fingolimod during pregnancy.

Reported malformations include congenital heart disease, such as tetralogy of Fallot, atrial and ventricular septal defects, and renal and musculoskeletal abnormalities.

### Advice on contraception use and need for pre-pregnancy counselling

The Association of British Neurologists’ guidelines (2019) on pregnancy in multiple sclerosis recommends that all women of childbearing potential should have regular pre-pregnancy counselling starting at or soon after diagnosis. Women considering pregnancy should also be advised to discuss their plans with their physician before trying to conceive.

Before starting fingolimod, women of childbearing potential must be informed of the risk of teratogenicity and have a negative pregnancy test. They must use effective contraception during treatment with fingolimod and for 2 months after stopping it. Due to its long half-life, use of fingolimod during the 8 weeks leading up to the last menstrual period may result in exposure of a subsequent pregnancy. Women should be advised to tell their doctor immediately if they think they may be pregnant.

When using any medicine with teratogenic potential, a woman should be advised of the risks and encouraged to use the most effective contraceptive method taking into account her personal circumstances. See Drug Safety Update March 2019 for guidance on contraceptive methods and frequency of pregnancy testing to reduce inadvertent exposures during pregnancy in a woman taking a medicine of teratogenic potential. Fingolimod has been shown not to interact with oral contraceptives containing ethinylestradiol and levonorgestrel, and an effect on other progestogens is not expected.

### New patient reminder card for women of childbearing potential

The educational materials (physician’s checklist and patient’s guide) are being updated to include new information on the risk of congenital defects and required mitigation measures. A new pregnancy-specific patient reminder card will be introduced to provide
further information on this risk to women of childbearing potential and to tell them to contact their doctor immediately if they experience disease worsening after stopping fingolimod. Women exposed to fingolimod while pregnant will also be encouraged to enrol in the pregnancy exposure registry.

Hard copies of the revised education materials and the new pregnancy-specific patient reminder card will be distributed to prescribers of fingolimod and copies can be requested by other healthcare professionals from the manufacturer. Electronic copies will also be made available on the electronic medicines compendium (eMC).

**Risk of rebound of disease activity with discontinuation**
Highly active disease has been reported in a small number of patients for up to 6 months after discontinuing fingolimod. Physicians should monitor patients discontinuing fingolimod for any return of disease activity (see July 2017 Drug Safety Update and section 4.4 of the Summary of Product Characteristics).

**Report suspected adverse drug reactions on a Yellow Card**
Please continue to report any suspected adverse drug reactions (ADRs) associated with fingolimod via the Yellow Card Scheme. Remember only a suspicion is needed to report – if in doubt, please complete a Yellow Card.

Any suspected ADRs associated with fingolimod exposure in pregnancy should also be reported via the Yellow Card Scheme. Due to its long half-life fingolimod exposure during pregnancy may occur if used during the 8 weeks leading up to the last menstrual period. For more about the importance of reporting suspected adverse drug reactions associated with medicines in pregnancy see Drug Safety Update July 2018.

Pregnancies exposed to fingolimod should also be enrolled in the fingolimod pregnancy registry for outcome monitoring.

Suspected ADRs after discontinuation of multiple sclerosis therapies should also be reported to the Yellow Card Scheme. Healthcare professionals, patients, and caregivers can report suspected side effects via the website or via the Yellow Card App. Download the app today via iTunes Yellow Card for iOS devices or via PlayStore Yellow Card for Android devices.

**Further information**
- Direct Healthcare Professional Communication, September 2019
- EMA. Updated restrictions for Gilenya: multiple sclerosis medicine not to be used in pregnancy. 26 July 2019
- Drug Safety Update. March 2019. General guidance on effective contraception and pregnancy testing in women taking a medicine with teratogenic potential

*Article citation: Drug Safety Update volume 13, issue 2: September 2019: 2.*
Elmiron (pentosan polysulfate sodium): rare risk of pigmentary maculopathy

Cases of pigmentary maculopathy leading to visual impairment have been reported with pentosan polysulfate, particularly after long-term use at high doses. Ensure patients taking pentosan polysulfate have regular ophthalmic examinations and ask them to promptly seek medical advice in case of visual changes.

Advice for healthcare professionals:

- rare cases of pigmentary maculopathy have been reported in patients using pentosan polysulfate, particularly after long-term use at high doses
- given the potentially irreversible nature of visual loss in pigmentary maculopathy, ensure patients taking pentosan polysulfate have regular ophthalmic examinations during treatment (for example, at baseline and annually)
- advise patients on pentosan polysulfate to promptly seek medical advice in case of visual changes such as reading difficulty or slow adjustment to low or reduced light environments
- consider stopping treatment in patients with pigmentary maculopathy
- report suspected adverse drug reactions to pentosan polysulfate sodium on a Yellow Card, including any visual problems or unusual findings in ophthalmic tests

Risk of pigmentary maculopathy

Pentosan polysulfate is indicated for the treatment of bladder pain syndrome (interstitial cystitis) characterised by either glomerulations or Hunner's lesions in adults with moderate to severe pain, urgency, and frequency of micturition. The recommended dose of pentosan polysulfate sodium is 300 mg per day, taken as one 100 mg capsule orally three-times daily.

A recent review of cumulative safety information identified rare cases of pigmentary maculopathy after use of pentosan polysulfate in patients with a diagnosis of interstitial cystitis (also known as bladder pain syndrome). The product information has been updated to include this risk.

In most cases, patients had used pentosan polysulfate long-term and at a dosage exceeding the recommended dose. In a recent retrospective study, patients with pigmentary maculopathy had a median length of exposure to pentosan polysulfate of 18.3 years with a range of 3.0–21.9 years.

Unique characteristics of pigmentary maculopathy associated with Elmiron

The pigmentary maculopathy described differs from other forms. Fundus examination showed unique subtle paracentral hyperpigmentation at the level of the retinal pigment epithelium (RPE) with associated areas of RPE atrophy. Multi-modal retinal imaging demonstrated abnormalities of the RPE and overlying retina generally contained in multiple well-delineated areas. This unique maculopathy has only been observed with use of pentosan polysulfate.

Monitor patients via regular ophthalmological examinations
The pathogenesis for pigmentary maculopathy with pentosan polysulfate is unclear and it is not known whether drug cessation will halt or alter the course of this retinal disorder. Nevertheless, as a precautionary measure, treatment cessation should be considered in affected patients.

Given the potentially irreversible nature of visual loss in pigmentary maculopathy, all patients taking pentosan polysulfate should have regular ophthalmological examinations (for example, at baseline and annually). This monitoring may allow early detection of pigmentary maculopathy, potentially at a reversible stage. Monitoring is particularly important for patients who are, or have been, taking pentosan polysulfate long-term or at a high dose.

Report suspected adverse drug reactions with pentosan polysulfate
Suspected adverse drug reactions, including any visual problems or unusual findings in ophthalmic tests should be reported to the Yellow Card Scheme. Remember only a suspicion is needed to report – if in doubt, please complete a Yellow Card.

Healthcare professionals, patients, and caregivers can report suspected side effects via the Yellow Card website or via the Yellow Card app. Download the app today via iTunes Yellow Card for iOS devices or via PlayStore Yellow Card for Android devices.

Montelukast (Singulair): reminder of the risk of neuropsychiatric reactions

Prescribers should be alert for neuropsychiatric reactions in patients taking montelukast and carefully consider the benefits and risks of continuing treatment if they occur.

Advice for healthcare professionals:

- be alert for neuropsychiatric reactions in patients taking montelukast; events have been reported in adults, adolescents, and children (see list of reported events below)
- advise patients and their caregivers to read carefully the list of neuropsychiatric reactions in the patient information leaflet and seek medical advice immediately should they occur
- evaluate carefully the risks and benefits of continuing treatment if neuropsychiatric reactions occur
- be aware of newly recognised neuropsychiatric reactions of speech impairment (stuttering) and obsessive–compulsive symptoms
- report suspected adverse drug reactions associated with montelukast to the Yellow Card Scheme

Advice to give to patients and caregivers:

- it is important you or your child do not stop montelukast without talking to a doctor or asthma nurse first
- adverse reactions affecting sleep, behaviour, and mood have been infrequently reported in people taking montelukast
- always read the leaflet that accompanies your or your child's medicines, and talk to a healthcare professional if you suspect any serious reactions to montelukast
- patients, parents, and caregivers can report suspected adverse drug reactions to medicines via the Yellow Card Scheme

Review of known risk of neuropsychiatric reactions

It has been known for some time that neuropsychiatric reactions may occur in association with montelukast treatment, and these reactions are listed as possible side effects in the product information. A recent EU review confirmed the known risks of neuropsychiatric reactions and found that the magnitude of risk was unchanged. However, the review identified some cases in which there had been a delay in neuropsychiatric reactions being recognised as a possible adverse drug reaction. Therefore, we remind healthcare professionals of the possible risks with montelukast and the need to consider the benefits and risks of continuing treatment if they occur.

Reported neuropsychiatric reactions

A range of neuropsychiatric reactions has been reported in association with montelukast. Among these are: sleep disturbances, depression and agitation (may affect up to 1 in 100 people taking montelukast); disturbances of attention or memory (up to 1 in 1,000 people); and very rarely, hallucinations and suicidal behaviour (up to 1 in 10,000 people). See the Summary of Product Characteristics and the Patient Information Leaflet for full details.
In the UK, between 2014 and 2018, MHRA received 219 reports of suspected adverse neuropsychiatric reactions to the Yellow Card Scheme, during which time there were approximately 14 million prescriptions of montelukast. Since montelukast was first marketed in the UK, we have received 639 reports of suspected adverse neuropsychiatric reactions.

In the UK, the most frequently reported suspected neuropsychiatric reactions associated with montelukast have been nightmares/night terrors, depression, insomnia, aggression, anxiety and abnormal behaviour or changes in behaviour. These events were reported in all age groups. However, nightmare/night terrors, aggression, and behaviour changes are more frequently reported in the paediatric population.

Updated montelukast product information for patients and healthcare professionals

More information to better describe the risks of neuropsychiatric events has also been added to the Summary of Product Characteristics and Patient Information Leaflet.

The EU review also evaluated very rare reports of cases of speech impairment (dysphemia), described as ‘stuttering’. Most of the cases were reported in children younger than 5 years, occurred shortly after montelukast was started (median time to onset 8 days) and sometimes occurred in conjunction with other suspected neuropsychiatric events. Where information was provided, in most cases the events resolved on stopping treatment.

In addition, the EU review endorsed the inclusion in the product information of very rare reports of obsessive–compulsive symptoms in the product information. Cases of obsessive-compulsive symptoms were reported to generally occur after a longer treatment period (median time to onset of 61 days) and sometimes occurred in conjunction with other neuropsychiatric events. Where information was provided, in most cases the events resolved on stopping treatment.

The product information is also being updated to include stuttering and obsessive-compulsive symptoms as very rare (thought to affect fewer than 1 in 10,000 patients) potential neuropsychiatric adverse events with montelukast.

About montelukast (Singulair)

Montelukast sodium is an oral leukotriene receptor antagonist. It is indicated for patients 6 months and older:

- for the treatment of asthma as add-on therapy in those patients with mild to moderate persistent asthma who are inadequately controlled on inhaled corticosteroids and in whom “as-needed” short acting beta-agonists provide inadequate clinical control of asthma.
- in those asthmatic patients in whom montelukast is indicated, montelukast can also provide symptomatic relief of seasonal allergic rhinitis.
- for the prophylaxis of asthma in which the predominant component is exercise-induced bronchoconstriction.
Report any suspected adverse reactions on a Yellow Card
Healthcare professionals and patients should continue to report any suspected adverse drug reactions associated with montelukast to the Yellow Card Scheme.

It is easy to report on the Yellow Card website or via the Yellow Card app. Download the app today via iTunes Yellow Card for iOS devices or via PlayStore Yellow Card for Android devices.

You can also use the app to access the latest safety information from the MHRA about medicines and medical devices on the Newsfeed. Search for medicines to see details of Yellow Card reports others have made. Medicines of interest can also be added to a Watch List to receive news and alerts about new side effects and safety advice as it emerges.

Further Information

Letters and drug alerts sent to healthcare professionals in August 2019

Letters
The following letters were sent to healthcare professionals in August 2019:

- Mitomycin-C Kyowa 40 mg: restricted to intravesical administration only for treatment of superficial bladder cancer
- Santen eye drop products (Cosopt, Trusopt, Timoptol): risk of medication error in transition to new bottles


Medical Devices Alerts issued in August 2019

In this monthly update, we highlight selected Medical Device Alerts that have been issued recently by MHRA. Please note, this is not an exhaustive list of medical device alerts. For all Medical Device Alerts from MHRA, see Alerts and recalls for drugs and medical devices.

Microneedling pens: Dermapen 3 and Dermapen Cryo Sterile single use needle cartridge tips for: Dermapen 3 – risk of injury or infection (MDA/2019/028). Manufactured by Equipmed and other trading names (listed alert), distributed in the UK by Naturastudios. Affected devices should be identified and should not be used on patients since they have been manufactured to unknown standards and their safety cannot be verified.