For Women

For Health, For Menopause

“Can HRT cause blood clots?”

GP and menopause specialist Dr Sarah Gray explains how to respond to patient concerns about blood clots and HRT.

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Consilient Health

Q: "Can HRT cause blood clots?"

A: Blood clotting (venous thromboembolism or VTE) happens for a whole variety of reasons, and although it isn't caused by hormone replacement therapy (HRT), HRT might affect how likely it is to happen.

The hormone estrogen is known to increase the blood's ability to coagulate and therefore, clot. HRT tablets (but not transdermal methods, eg patches, gels or sprays) are linked with a higher risk of developing a blood clot.

If the patient is already at higher risk of blood clots (for example with a family history or obese) consider prescribing transdermal estrogen rather than tablets.

Menopause: diagnosis and management NICE Guideline (NG23[1]) advises:

- the risk of venous thromboembolism (VTE) is increased by oral HRT compared with baseline population risk.
- The progestogen component of HRT may also influence the risk of a DVT, which may be greater with androgenic synthetic progestogens than natural progesterone (but findings from observational studies need confirmation)
- the risk of VTE associated with HRT is greater for oral than transdermal preparations.
- the risk associated with transdermal HRT given at standard therapeutic doses is no greater than baseline population risk.
- Risk increases with age and BMI among other risk factors.

The effect of estrogens on blood clotting are fairly small and vary according to the dose of the estrogen in the HRT. The effect can be significant if the starting dose is of a high level.

The effect also varies according to the type of estrogen – the sorts of estrogen in contraceptive pills have a greater tendency to affect blood clotting than the natural estrogens that are in HRT[2].

REFERENCES:
1 Menopause: diagnosis and management (NG23) https://www.nice.org.uk/guidance/ng23/chapter/Recommendations#individualised-care
2 Vinogradova BMJ 2019

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Absolute risk

Vinogradova et al's 2019 paper, *Use of hormone replacement therapy and risk of venous thromboembolism: nested case-control studies using the QResearch and CPRD databases*, found that: 'The rate of VTE for the unexposed population based on the CPRD cohort was 16.0 per 10,000 women and the number of extra VTE cases among oral HTA users (all ages) was 9 per 10 000 women. However, for natural estradiol (E2) it is lower by 4 cases per 10,000 women and the highest number of extra cases is 18 per 10,000 women for fully synthetic oral combination (CEE/MPA) as well as for younger age 40–45.'

If your patient is slim and active, has normal blood pressure, and is a non-smoker, then their natural chance of having a blood clot is small. Ensure that the patient understands that it is reasonable to accept that increase in risk, to balance out against the positive effects of HRT such as bone health[3] and protection against cardiovascular disease[4].

However, if your patient's risk is high because they have either big risk factors or lots of risk factors, such as obesity or a family history of VTE[5], then any multiplication presents a significant risk to them. In these cases, oral estrogens should not be offered and transdermal estrogens should be prescribed instead.

HRT doesn't cause blood clots, but it may affect the risk of developing them in certain patients with other contributing risk factors.

REFERENCES:
3 Menopause: diagnosis and management (NG23) https://www.nice.org.uk/guidance/ng23/chapter/Recommendations#long-term-benefits-and-risks-of-hormone-replacement-therapy
4 Hormone therapy for preventing cardiovascular disease in post-menopausal women https://pubmed.ncbi.nlm.nih.gov/23633307
5 Menopause: diagnosis and management (NG23) https://www.nice.org.uk/guidance/ng23/chapter/Recommendations#individualised-care

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