Risks of venous thromboembolism with various hormonal contraceptives

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Clinical question

How does the venous thromboembolism (VTE) risk compare across various hormonal contraceptives?

Evidence

There are no long-term RCTs, which leaves cohort and case-control studies as evidence.

- The Society of Obstetricians and Gynaecologists of Canada[1] and others[2] have stated that evidence about the risk of VTE with different progestins is inconclusive owing to mixed results and a high risk of bias.
- Some studies found no increased VTE risk with drospirenone[3] or a transdermal patch.[4]
- Some studies found that different hormonal contraception did affect VTE risk:
  -Third-generation progestins (desogestrel, gestodene, drospirenone, or cyproterone) increased VTE risk (about 2 times) over second-generation progestins (like levonorgestrel or norethisterone).[5-7]
  -Transdermal estrogen and vaginal rings increase VTE risk (about 2 times) over combined oral contraceptive pills (OCPs) with levonorgestrel.[8]
  -Those using intrauterine devices with progestin or progestin-only pills have the same VTE risk as nonusers.[7,9]
  -Lower-dose estrogen reduces VTE risk.[1]
- If these differences are real, the absolute risk of VTE per 10 000 woman-years (or 1000 women over 10 years) might be approximately
  -4 to 5 for nonusers, women using progestin-only pills, or progestin intrauterine devices[1,7];
  -10 for users of OCPs with levonorgestrel or norethisterone[1,7]; and
  -20 (at most) for the transdermal patch or vaginal ring, and OCPs with desogestrel, gestodene, drospirenone, or cyproterone.[7,8]
  -Absolute risk of pregnancy (for comparison) is 29.[1]

Context

- To keep the risk differences in perspective, one group estimated that 2000 patients would need to switch to lower-risk combined OCPs to prevent 1 VTE per year.[7]
- Even the largest study using confirmed VTE[7,8] was retrospective, with potential confounders, leaving considerable uncertainty about whether increased risks were real.
- Other factors influencing VTE risk are age (age 45 to 49, 6 times the risk of age 15 to 19),[7] obesity (body mass index above 35 kg/m^2, 4 times the risk of body mass index 20 to 25 kg/m^2),[10] and smoking (about twice the risk).[10]

Bottom line

There is real uncertainty about whether the risks of VTE vary with different hormonal contraceptives. If they do, the increased risk appears to be about 1 extra VTE a year per 2000 women.

Implementation

There are many contraception options available in Canada. It is important for FPs to be informed and capable of educating patients on the variety of options and their effectiveness and risks. Fisher and Black offer a good review of the options and their effectiveness, risks, and contraindications.[11] Tools available for patients include the Health Canada website (**www.hc-sc.gc.ca/hl-vs/sex/control/index-eng.php**) and **sexualityandU.ca**, an initiative of the Society of Obstetricians and Gynaecologists of Canada.

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The opinions expressed in this Tools for Practice article are those of the authors and do not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.

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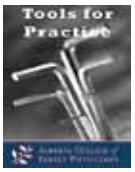

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