



The Role of SERMs after Menopause

SERMs is the shorthand term for a class of drug called selective oestrogen receptor modulators. These compounds are also referred to as oestrogen agonist/antagonists. They are a versatile group of drugs that can be used to treat a number of conditions associated with aging such as osteoporosis and hormone responsive cancers, and also infertility.

Different kinds of SERMS

- Naturally occurring SERMs include plant-derived oestrogens or phyto-oestrogens that are sometimes used to treat symptoms of menopause.
- Clomiphene citrate is an early SERM which is used to induce ovulation in women desiring pregnancy.
- Tamoxifen is another SERM which is taken to reduce the risk of recurrent breast cancer and to prevent the development of breast cancer in women at increased risk of breast cancer. It acts as an anti-oestrogen to reduce oestrogen stimulation in the breast but as an oestrogen agonist in other parts of the body. It improves bone density but increases the risk of endometrial cancer and also of deep vein thrombosis (DVT). In women who have had breast cancer this risk is outweighed by the benefits of reduction in risk of recurrent breast cancer.
- Newer SERMs are being developed to make use of the positive effects of oestrogen such as preventing osteoporosis, treating genital atrophy (vaginal dryness), reducing cardiovascular risk and preventing breast cancer. These agents aim to minimise the negative effects of the older agents. Raloxifene, is already available in both Australia and New Zealand. Bazedoxifene and ospemifene are available in the USA and in some parts of Europe.

Benefits of raloxifene

- Raloxifene has been shown in clinical trials to increase bone density in the spine and hip and to reduce the risk of spinal fractures in women with osteoporosis.
- Unlike tamoxifen, raloxifene is anti-oestrogenic in the uterus so it does not have an increased risk of endometrial cancer. It is unlikely to cause bleeding or spotting.
- Raloxifene has been shown to reduce the risk of invasive breast cancer by 70% in women who are taking it for osteoporosis or who are at increased risk of developing breast cancer, with fewer side effects than tamoxifen.
- Raloxifene lowers serum total and LDL cholesterol but does not affect HDL cholesterol or triglyceride levels



Risks of raloxifene

- Raloxifene does not improve menopausal symptoms, and may in fact cause hot flushes. Its use is therefore limited to postmenopausal women who do not have troublesome symptoms of menopause.
- Raloxifene does not reduce the risk of peripheral fractures.
- Like oral oestrogen, raloxifene slightly increases the risk of DVT and has been shown to increase the risk of fatal stroke in women with coronary artery disease (CAD) or at high risk of CAD.

Side-effects and other downsides of raloxifene

- Raloxifene is not suitable for women who still need menopausal hormone therapy for control of symptoms.
- Side-effects of taking raloxifene include hot flushes, leg cramps and swelling of the legs.

Other SERMS

- Bazedoxifene is a third generation SERM and has estrogen agonist effects on bone but appears to have no effect on the endometrium. Studies to date have not shown changes in breast density or breast tenderness. It has been combined with conjugated estrogens (Duavee™) in what is referred to as a tissue selective estrogen complex (TSEC). It is used to prevent osteoporosis and treat menopausal symptoms without the need for a progestogen. The most common side effects observed in patients receiving Duavee were muscle spasms, nausea, diarrhea, dyspepsia, upper abdominal pain, oropharyngeal pain, dizziness, and neck pain.
- Ospemifene is an estrogen agonist in the vaginal epithelium and is used to treat dyspareunia. It is taken as a tablet once daily. The most common side effects include flushes, sweats and muscle cramps.

References:

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