1) Alpha adrenergic drugs: phenylpropanolamine hydrochloride is found in many prescription and over-the-counter (OTC) cold/cough preparations and antihistamines (anti-allergy).

Typical dose is 25-75mg in sustained-release form, twice a day. It should not be used in patients with obstructive incontinence.

Caution is necessary in patients with high blood pressure, overactive thyroid, and heart conditions.

2) *Pseudoephedrine hydrochloride* : 15-30mg three time a day

3) *Hormonal replacement therapy (HRT) /Oestrogen*: this helps to maintain and restore urethral tissue health in post-menopausal women. Oestrogen appears to reduce stress incontinence, heightening bladder outlet resistance by increasing blood flow, tone and nerve response in the urethral muscle.

However, its exact mechanism of action remains unknown.

To avoid build-up of the lining of the womb (endometrium), progesterone should be given with oestrogen. Various doses are used. Oestradiol is available as a skin-patch (Femapak, Estrapak, Evorel) and as a vaginal ring.

UK guidelines (British National Formulary, September 2000) suggest that long-term HRT is "almost certainly favourable in risk-benefit terms for menopausal women *without a uterus* because they do not require progesterone therapy.

It should be continued for about 10 years. In women with an intact womb, the picture is less clear. The Committee of Safety of Medicines (CSM) advises that there is some increased risk of breast cancer, but that this risk reduces to that of the general population 5 years after stopping HRT.

About 45 in every 1000 women aged 50 not taking HRT will have breast cancer diagnosed over the next 20 years; in those using HRT for 5 years, the figure rises by 2 extra cases per 1000, if using HRT for 10 years, 6 extra cases per 1000, rising to 12 extra cases if HRT is used for 15 years.

This does not mean HRT cannot be used, but emphasises the necessity for regular self-checks and mammograms. There is also a risk of venous thrombosis, particularly if there is a family history, severe varicose veins, obesity or prolonged bed rest: in these cases, the need for HRT should be reviewed.

On the plus side, HRT helps to protect from osteoporosis, a condition which is more likely to occur in people who are physically inactive, are thin, smoke or drink to excess.

Steroid therapy is also a risk factor.

Loss of mobility due to arachnoiditis therefore confers some increased risk of developing osteoporosis (thinning of the bones).

4) *Combined oestrogen/alpha-adrenergic agonist therapy* : may be beneficial in post-menopausal women who have malfunction of the urethral sphincter muscles. Phenylpropanolamine (PPA: found in OTC preparations such as Dimetapp and Robitussin-CF) 25-100mg twice a day plus oestrogen tablets(dose varies).