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BHRT (BIO-IDENTICAL HORMONE REPLACEMENT THERAPY)

DOSING GUIDELINES

This dosing guideline is for general reference only. Each patient should be evaluated as an individual based on their overall health, hormone composition and any associated risk factors.

PMS SYMPTOMS – TREAT FROM DAYS 14 to 25 OF CYCLE

ORAL ADMINISTRATION

- Progesterone 25mg – 250mg SR capsules, night-time dose. May be twice daily dosing if necessary.

First pass metabolism of Progesterone predominantly produces metabolites that cross blood brain barrier and act at GABA receptors. Daytime dose may cause lethargy but may reduce anxiety.

TOPICAL APPLICATION

- Progesterone 5mg – 30mg applied once or twice a day.
  Twice daily dosing of BHRT is more common in younger adults due to their higher metabolisms.

PERI-MENOPAUSE

ORAL ADMINISTRATION

- Progesterone 25mg-300mg SR capsules, night-time dose or twice a day if necessary.

Administer cyclically either from days 14-25 or days 1-25

A lower dose maybe administered from days 1-13

- Estradiol, Triest (80:10:10) and Biest (80:20) – can be added to progesterone therapy, particularly I symptoms are not well controlled by progesterone alone.

Start low and titrate up 0.1mg – 1.0mg dose once or twice a day from 1-25 of cycle.

TOPICAL APPLICATION

- Progesterone 5mg to 40mg applied once or twice a day cyclically during days 14-25 or days 1-25. A lower dose may be administered from days 1-13.
- Biest *0.1mg to 0.5mg once or twice a day from day 1-25 or cycle in addition to progesterone. This is particularly used if symptoms are not well controlled by progesterone alone.

*Biest is best applied through the transdermal layer compared to oral routes.

MENOPAUSE

Dose clinically as per peri-menopausal if there is any uncertainty of whether patient is no longer producing endogenous hormones. Ensure maintenance of high progesterone to estrogen ratio during treatment, to aid in suppression of endometrial hyperplasia.

If there is a lack of menopausal symptoms use lower dosage range(s) and monitor BMD, Lipids an BP. Supplementation should be given monthly (to mimic menstrual cycle) from day 1-25 of each calendar months. Alternatively supplementation can be given each day and incorporate a 3-5 day break each calendar month.

ORAL ADMINISTRATION

- Progesterone 25mg – 400mg SR capsules daily, in divided doses if necessary.
- Estrogen 0.25mg – 1.0mg capsules daily, in divided doses if necessary (Estradiol, Biest and Triest).
- Estriol 1-8mg capsules daily, in divided doses if necessary.
- Testosterone 1mg – 5mg capsule daily as morning dose.
- DHEA 5-20mg SR capsule daily as morning dose.
- 7-Keto DHEA 5-25mg capsule daily as a morning dose.

TOPICAL APPLICATION

- Progesterone 10mg – 50mg daily, in divided doses if necessary.
- Estriol 1-4mg daily, in divided doses if necessary.
- Estradiol 1.5mg – 2mg daily, in divided doses if necessary.
- Triest 0.5mg – 2mg daily, in divided doses if necessary
- Biest 0.1mg – 1.2mg daily, in divided doses if necessary.
- Testosterone 0.25mg – 10 mg daily, in the morning.
- DHEA and 7-Keto DHEA 0.5mg – 50mg daily, in the morning. DHEA is generally more effectively absorbed orally then transdermal.

SUBLINGUAL (TROCHE) ADMINISTRATION

- Progesterone 50mg – 400mg daily, in divided doses if necessary.
- Estriol 1.0-4.0mg daily, in divided doses if necessary.
- Estradiol 0.5-2.0mg daily, in divided doses if necessary.
- Triest 1.0mg-2.0mg daily, in divided doses if necessary
- Biest 0.5mg – 2.0mg daily, in divided doses if necessary.
- Testosterone 0.5mg – 4mg daily, in the morning.
- DHEA 5.0mg – 25.0mg daily, in the morning. DHEA is generally more effectively absorbed orally then transdermal.
- 7-Keto DHEA 5.0mg – 35mg daily, in the morning.

VAGINAL ADMINISTRATION

- Progesterone 25mg – 50mg daily, in divided doses if necessary.
- Estriol 0.5mg – 1.0mg nightly for 2 weeks, then twice a week for maintenance.
- Estradiol 0.1mg – 0.5mg daily, in divided doses if necessary.
- Triest 0.5mg – 2mg daily, in divided doses if necessary
- Biest 0.1mg – 1.5mg daily, in divided doses if necessary.
- Testosterone 0.1mg – 1.0mg mg daily, in the morning.
- DHEA and 7-Keto DHEA 0.5mg – 50mg daily, in the morning. DHEA is generally more effectively absorbed orally then transdermal.

CANCER RISK PATIENTS

ORAL ADMINISTRATION

- Progesterone 50mg – 400mg SR capsule, daily.
- Estriol (regulating form of estrogen) 0.5mg to 8mg, daily. In divided doses if necessary.

TOPICAL APPLICATION

- Progesterone 20mg – 50mg daily, applied in divided doses if necessary.
- Topical progesterone aids in protection of endometrial hyperplasia/cancer
- Estriol 0.1mg to 0.2 mg daily, applied in divided doses if necessary – titrate until symptoms become tolerable

Monitor BMD, lipids & BP

REFERENCE: Jim Paoletti, PCCA USA.

FURTHER BHRT GUIDANCE

Estrogen is highly absorbed through the skin and is more likely to produce the more **favorable metabolites.** **Estrogen orally** can increase SHBG and increase **unfavorable metabolites**, BP, Triglycerides, liver enzymes, CHO craving and decrease growth hormone and Serotonin metabolism.

Aim to keep **progesterone to estrogen** ratio **high. Estrogen** supplementation should **start low and titrate slowly.** Patient should see changes in 3-5 weeks but maximum results for the prescribed strength demonstrated after 2-3 months once receptors are down regulated by progesterone.

Progesterone is recommended to be supplemented **alongside any estrogen** supplementation and most often is supplemented for 3-6 months initially, then patient retested before starting oestrogen supplementation.

If there is no relief of symptoms after 2-3 months then progesterone is more suitable to increase.
Estrogen symptoms may arise when progesterone levels are too high. This stresses the importance of regular serum or saliva testing as common symptoms may not always be a true representation of the patient's hormonal profile.

Vaginal atrophy may be treated with internally applied Estriol as an intense initial therapy 1mg to 3mg daily for 1-2 weeks, then titrate dosage and strength down according to relief of symptoms. **Estriol applied vaginally** maybe supplemented alongside existing BHRT.

Available bioidentical estrogens include estrone, estradiol and Estriol. Blends include **triest** (E1:E2:E3 10:10:80) and **Biest** (E2:E3: 20:80). Biest is the most common estrogen blend supplemented due to it providing the benefits of the synergistic estrogen's, estradiol and Estriol, and reducing risks that maybe associated with estrone supplementation (particularly ratio maybe adjusted for specific patients though this should be noted on the script (30:70, 50:50). Topical dosage having a maximum of 0.525mg of either hormone once or twice a day.

Pregnenolne may be supplemented for sex hormone or cortisol replacement. Commonly compounded as a low dose daily capsule or troche. Adrenal fatigue treatment is very specific and should always start at a very low daily dose with close monitoring. Sex hormone supplementation maybe dosed daily or weekly. The most suitable dosage frequency for menopausal or post-menopausal patients is a total weekly supplementation of 50mg – 400mg (average.

It is not recommended as a first line BHRT treatment as the pathway of pregnenolone cannot be predicted for each hormone thus the supplementation cannot be titrated in any way.

DOSAGE FORMS

Compounding allows prescribers to have great flexibility in titrating individual needs and offers patients a variety of dosage forms.

- **TROCHE** is a sublingual lozenge, available in a tray of 30 troches.
  - Each troche is scored and can be divided into half or quarter segments for easier administration and extended treatment time.
  - Each troche holds a maximum of approximately 500mg to 600mg of hormone.
  - Troches can be **flavored e.g.: peppermint, lemon and aniseed (natural plus many artificial flavors e.g.: strawberry, butterscotch orange are available.**
  - A selection of bases exist including sugar free polyglycol base. The troche maybe used sublingually or vaginally, absorption rate is generally equivalent for most patients.

- **ADMINISTRATION OF TROCHE:** it is placed in buccal cavity or under the tongue for dissolution.
  - This site should be rotated daily to avoid saturation of one site.
  - No drink and food to be administered while troche is dissolving.
  - Administration is best after a meal to reduce hormones from being swallowed from increased saliva content.
  - Approximately one third of hormones will be ingested orally while troche is dissolving.

CHANGING DOSAGE FORMS

Troche to transdermal preparation *(Switching patient between transdermal preparation and troche)*

Progesterone:	50mg to 100mg (troche) = 1% to 1.5% (cream)	150mg to 250mg (troche) = 2% to 3.5% (cream)	300mg to 400mg (troche) = 4% to 6% (cream)
Estrogen:	Reduce by 10% to 30%		
DHEA:	Strength remains equal		
Testosterone:	Strength remains equal		

PREFERRED DOSAGE FORMS – Creams

The patient should rub the dose into soft unexposed skin covering a large surface area, then wash their hands.

Transdermal/topical preparations give a slow release action.

- **Estrogen** is best placed on fatty tissue sites.
- **Progesterone** and **DHEA** application location should be variable. Do not apply progesterone to abdomen area, as it disrupts digestion.
- Testosterone may be place on muscular areas if desired.
- **All sites** of application should be on soft unexposed skin for increased rate of absorption and rotated daily.

Liposomal cream base or gel is suitable as a base. **Testosterone** is commonly compounded into gel for application to sites of muscle tissue (popular with male BHRT).

CHRYSIN

- Commonly compounded in gel or cream with or without testosterone
- Aids in reduction of aromatization of testosterone.
- Dose according to symptoms, testosterone dosage and patient's health, generally 2 – 8% Chrysin

ANDROPAUSE

- **Testosterone** topical and sublingual
  - Initial treatment 25mg – 50mg as a morning dosage, may increase to 50mg – 100mg daily
- **DHEA** dosage is similar to testosterone
  - 25mg – 100mg as a sublingual or oral morning dose.
  - Topical administration not recommended as hormone is not well absorbed through the skin and the base material cannot accommodate a large dosage (500mg – 1000mg daily).
- **7-Keto DHEA** is a metabolite of DHEA, which may be substituted in patients where testosterone and/or estrogen levels are becoming elevated with DHEA supplementation
  - Dosage may be increased up to 25% when switching from DHEA to 7-Keto DHEA.
  - Check hormone profile 2-3 months after changeover.
  - Aids in avoiding androgenic adverse effects e.g. acne, oily skin and facial hair.
- **Progesterone**
  - Dosage oral or topical 2.0mg-10.0mg daily.

Lifestyle tips for patients using BHRT to gain maximum benefit and safe metabolisation of their hormones:

- High protein, low fat and low carbohydrate diet (organic where possible and increased cruciferous vegetable, kudzu and soy consumption)
- Moderate exercise
- Extra vitamin supplementation: DIM or Indole-3-carbinol, Vitamin B6, Vitamin B12 and Folate, Omega-3 fatty acids, Flaxseed Oil
- Reduction in stress, weight, smoking and alcohol consumption

*BHRT has a six month expiry and should be stored at room temperature