The Tavistock and Portman
NHS Foundation Trust

Post Discharge Hormone Management for:
Treatment of Gender Incongruence in Transgender women, Transfeminine and non-binary people (assigned male at birth)

Your patient has been discharged from the Gender Identity Clinic. Below is guidance on the ongoing hormonal management of this patient in the immediate and longer-term future.

The current data suggest that long-term treatment with oestrogen in trans women and transfeminine people is associated with a slight increase in the standard mortality ratio. This increase in mortality appears to comprise an increase in the risk of suicide in vulnerable individuals and also an increase in cardiovascular deaths. The increase in suicide deaths appears to have been higher in the past but nonetheless psychological health should be assessed. The observed increase in cardiovascular disease appears to be solely associated with the use of ethinylestradiol, but not other oestrogen types, and so this oestrogen type should be avoided. Breast cancer is extremely rare in this patient group and therefore hormone treatment can safely continue lifelong.

For clients with a non-binary gender identity, the aims of therapy may be different to the standard aims outlined in this document and as such they may have an individualised care plan; please seek guidance from the GIC as needed.

The monitoring advice depends on the oestrogen preparation being used, the details of each being given below. In general, only annual monitoring is needed once the patient is established on a stable regimen.

Standard health screening programme recommendations should be followed. The patient should be advised that they will get an automatic call-up to female but not male screening programmes if they have had their gender changed on the NHS computer system. A comprehensive gov.uk guide to screening for transgender people can be found here: https://www.gov.uk/government/publications/nhs-population-screening-information-for-transgender-people

Additionally, the patient should be advised to self-examine their breast tissue for lumps on a monthly basis, and attend for breast cancer screening when invited for this. If having a mammogram, patients should advise that they were assigned male at birth, otherwise there may be false positive reporting of breast abnormality. They should also continue with testicular self-examination if they have not had genital surgery.

With regards to poor energy and libido disturbance, this patient group can suffer from hypoactive sexual desire disorder (HSSD), something which can respond well to adjustment in hormone therapy, including possible use of low-dose testosterone. If this seems to be the case, please contact our service for advice or contact a specialist endocrine service for assessment.

We suggest that from time to time you check with our website to see if there have been any changes in hormonal treatment practice, as occasionally, with increasing knowledge, we do change our hormonal advice and practice. Please see: https://tavistockandportman.nhs.uk/services/gender-identity-clinic-gic/.

Transdermal estradiol gels, patches or sprays are usually recommended as first line for patients who:

- Are age 45 or higher
- Have a BMI of 40 kg/m2 or higher
- Smoke/use tobacco (if smoking, use cisgender HRT dosing)
- Have a history of thromboembolism or risk factors for thromboembolism
- Have a history of cardiovascular event or risk factors for cardiovascular disease
- Have abnormal liver function tests that do not normalise on repeat
- Have chronic headaches or migraine (and if there are focal/hemiplegic symptoms Neurology advice is also required regarding stroke risk and safety of oestrogen therapy).

Estradiol formulations: QUICK GLANCE DOSE TITRATION & MONITORING GUIDE						
Preparation	**Initial dose**	**Frequency, instructions for use**	**Target range, oestradiol**	**Monitoring Method**	**Maximum Dose**	**How to adjust, if needed**
Tablets Estradiol valerate: e.g. *Progynova* Estradiol hemihydrate: e.g. *Zumenon* or *Elleste-Solo*	2 mg once a day	Take tablets altogether each morning swallowed whole (not to be dissolved under the tongue)	400-600 pmol/L	Bloods 4-6 hours after taking tablets	Up to a maximum of 10 mg once a day	Usually 2mg adjustments, 1mg if oestradiol only a little out of range
Patches Estradiol: *Estradot, Evorel, Estraderm, Progynova TS*	50 mcg/24hr twice weekly	Apply prescribed dose twice a week; patches changed after 3-4 days.	400-600 pmol/L	Bloods 48-72 hours after patch application	Maximum dose 250mcg/24hr twice weekly	Usually 50mcg adjustments, less if oestradiol only a little out of range
Topical Gels and Spray Estradiol: *Sandrena*	0.5 mg sachet once a day	Daily, apply full dose in the morning, to inner thighs or lower torso/ abdomen - but not to breast or	400-600 pmol/L	Bloods 4-6 hours after application (no gel/spray on the arms)	For Sandrena, 5mg once daily	For Sandrena, usually 1mg adjustments, or 0.5mg if oestradiol

Oestrogel 0.06% gel pump *Lenzetto* 1.53 mg/dose spray	1 pump (0.75 mg) once a day 1 spray, once a day	genital areas.			For Oestrogel, 10 pumps (7.5 mg) once a day For Lenzetto, 6 sprays once a day	only a little out of range. For Oestrogel, usually 1 pump adjustments For Lenzetto, usually 1 spray adjustments
***Implants** Estradiol	50 mg	6-24 monthly	Trough value of 400-500 pmol/L	5 months after implant then repeated monthly until less than 500 (to inform secondary care)	100mg	*Secondary care oversight

Medications that may be recommended in addition to estradiol:	
GnRH analogues: Decapeptyl (triptorelin) SR 11.25 mg (IM) every 12 weeks or Zoladex (goserelin) 10.8 mg (sub cut) every 12 weeks *Alternatives:* Leuprorelin (Prostap) 11.25 mg (IM) every 3 months Leuprorelin (Prostap) 3.75 mg (IM) monthly Goserelin 3.75 mg (sub cut) monthly Decapeptyl SR 3 mg (IM) monthly Decapeptyl SR 22.5 mg (IM) every 6 months Nafarelin (Synarel) nasal spray, 200-400 micrograms twice a day (see BNF)	Used to suppress testosterone to female range (0-3 nmol/L). **The GIC will advise on starting these** (if needed), usually after patients are on oral estradiol 4mg daily (or equivalent topical dose). A two week course of Cyproterone Acetate, 50mg orally a day is usually recommended with the first GnRH analogue injection, unless the patient has significant liver disease or hyperprolactinaemia or depression.
Anti-androgens: Finasteride 5mg OD Dutasteride 0.5 mg OD Cyproterone acetate 12.5 mg - 25 mg OD	As additional anti-androgen; for excess facial or body hair; or scalp hair thinning.
Testosterone:	Low dose testosterone gel may be recommended for symptoms of

Usually as Tostran 2% gel, half an actuation once a day (5 mg). **The GIC will advise on starting this** (if needed) and will advise what checks need to be done prior to initiation.	hypoactive sexual desire disorder (HSDD).

Blood tests that need to be requested (including safety blood tests, for monitoring):

Oestradiol, testosterone, prolactin and Liver function tests. For timings (varies by formulation), see above.

Blood tests should be done 8 weeks after starting treatment, and 8 weeks after any change to dose, frequency or formulation.

Monitoring frequency:

As above, monitoring bloods should be done 8 weeks after any change to dose, frequency or formulation.

Additionally, monitoring bloods should be done every 3-6 months in the first year, every 6-12 months in the second year, and then annually thereafter if therapy is stable with no red flags as below.

Blood pressure and body mass index should be monitored every 3-6 months in the first year of therapy, and after any dose change, then annually when treatment stabilised (or more frequently if indicated).

Red flags for monitoring, and actions:

As well as looking to keep the oestradiol level within range, as above, there will occasionally be results from the safety blood tests that need action:

1. Testosterone:
If testes are still present, usual practice is to use medication to keep testosterone suppressed, i.e. under 3nmol/L. If total testosterone levels increase over 3 nmol/L, it may be worth checking compliance with recommended treatment. Seek advice from the GIC as required.

2. Thromboembolism:
Stop oestrogen therapy until patient is anti-coagulated. Kindly alert the GIC team as soon as possible and forward relevant documentation on management and/or discharge letters. When haematology advises that it is safe to do so, oestrogen therapy with topical formulations (gel, patch, spray) can be resumed. Anti-coagulation should be lifelong whilst on oestrogen therapy.

3. Prolactin:
Transient mild hyperprolactinaemia is often seen with oestrogen therapy. If prolactin is higher than normal but less than 1000 then repeat the prolactin. If repeat prolactin levels remain elevated then discuss with the GIC. Review medications for those that can cause hyperprolactinaemia. If prolactin is higher than 1000 then please refer to local endocrine service for assessment and consider requesting a pituitary MRI scan.

4. Abnormal Liver Function Tests:

For values less than 3x the upper limit of normal: check medicines and alcohol history and retest in 4-6 weeks. If Liver function tests are abnormal on repeat, then perform further investigations to determine the cause: Hepatitis B and C serology, HIV serology, EBV, Ferritin, Copper, Caeruloplasmin, liver auto-immune screen, ultrasound of the liver.

If the person is using oral oestrogen it may be appropriate to change to a topical oestrogen to reduce the strain on the liver; please discuss this with the GIC endocrine service.

If values are greater than 3x the upper limit of normal: GP to suspend hormone therapy and refer to local hepatology.

5. New diagnosis of Cancer, Stroke or Myocardial Infarction:
Temporarily suspend hormone therapy until discussion with the GIC team.

Medication shortages and alternative formulations:
If there are local supply issues with particular formulations of hormonal medications, there are alternatives. We also have information on appropriate doses when switching formulations. Please see the following link for our advice: https://tavistockandportman.nhs.uk/services/gender-identity-clinic-gic/information-for-health-professionals/

Contact with the GIC endocrine team:
Please note **we are not an emergency service**. We can only give advice on patients who are under, or who have been under, our care. **Please only contact us by one means, either email or telephone. Doing both puts extra strain on our resources.**

Many of your questions may be answered by looking at the endocrine advice on the GIC website we suggest that you check here for the answer to your question in the first instance: https://tavistockandportman.nhs.uk/services/gender-identity-clinic-gic/. Furthermore, the webpage for hormone advice is: https://tavistockandportman.nhs.uk/services/gender-identity-clinic-gic/information-for-health-professionals/

We can advise on dose titration and adjustments to therapy, on receipt of blood test results and other monitoring information. If sending results for review, please also send confirmation of current hormonal therapies and dosages for clarity and safety purposes.

Email: GPs and other healthcare professionals can email GIC.Endo@tavi-port.nhs.uk with queries, or for advice and support regarding hormonal therapies.

Telephone: We have a hormone advice telephone line for GPs and other healthcare professionals. If we do not answer the phone call, please leave a message. We aim to respond within 48 hours. The telephone number is: **020 8938 7369**