



Hypogonadism: Patient referral pathway

Hypogonadism in men may be difficult to recognise in general practice, yet it is a condition estimated to affect at least five in every 1000 men¹ in the general population*.

Characterised by low levels of serum testosterone in combination with a number of symptoms including loss of libido, erectile dysfunction, depression, irritability and reduced sense of well-being, the condition has a significant impact on the health of sufferers. Hypogonadal men are also at higher risk of fractures due to osteoporosis.²

Prompt diagnosis and referral to an endocrinologist are therefore key to avoid serious long-term consequences for health.

With this in mind these pathways have been developed as a guide to initial biochemical screening, specialist referral, endocrine diagnosis and androgen replacement. This will facilitate optimal management for the long-term therapy of hypogonadal men shared between primary and secondary care.

Endorsed by the Klinefelter's Syndrome Association UK, these pathways aim to provide a clear tool for the identification of and appropriate care for, those men with this under-diagnosed condition.

Signed:

Dr John Bevan

Consultant endocrinologist, Aberdeen Royal Infirmary

Working party

Professor Pierre-Marc Bouloux

Professor of endocrinology, Royal Free Hospital, London

Professor Ashley Grossman

Professor of neuro-endocrinology,
St Bartholomew's Hospital, London

Professor T. Hugh Jones

Consultant physician & endocrinologist and honorary professor of andrology, Barnsley Hospital and University of Sheffield

References

1 Handelsman DJ Androgens In: McLachlan, RI. Ed. Male reproductive endocrinology. Endotext.com, 2002

2 Jockenhovel F. Ageing Male 7: 319-324, 2004

* Data based solely on incidence of Klinefelter's Syndrome at birth

GP | pre-referral

Presentation

Patient presents with symptoms

- 1 Erectile dysfunction
- 2 Loss of libido
- 3 Other
 - Fatigue
 - Reduced feeling of well-being
 - Depression
 - Loss of concentration
 - Sweats / hot flushes
 - Unexplained anaemia
 - Reduced muscle mass
 - Reduced body hair

Assessment

General history

- Duration of symptoms
- Social history (relationships, alcohol, smoking)

Past medical history

- Previous testicular injury
- Previous head injury
- Headache \pm visual disturbance
- Any chronic illnesses

Drug history

- Prescription drugs: eg. β -blockers, corticosteroids, anticonvulsants
- Any 'alternative' remedies?
- Any drug abuse?

Physical examination

- General physical exam
- BMI/Waist circumference
- Testicular size / consistency
- Secondary sexual hair
- Visual fields

Testing

Measure serum testosterone levels between 8-10am

Testosterone $>12\text{nmol/l}$

Consider other diagnoses including psychosexual dysfunction

Testosterone $\leq 12\text{nmol/l}$

Further tests

- Repeat early morning testosterone level, plus
- Luteinizing hormone (LH)
- Follicle stimulating hormone (FSH)
- Prolactin
- Sex hormone binding globulin (SHBG)

Normal levels

- Testosterone ($>12\text{nmol/l}$)
- Prolactin
- SHBG
- FSH / LH

Testosterone 8 - 12nmol/l and normal levels of

- Prolactin
- SHBG
- FSH/LH

Testosterone 8 - 12nmol/l

- Raised Prolactin
- Raised SHBG
- or
- FSH/LH low or high

Testosterone $<8\text{nmol/l}$

Repeat tests

- Consider referral if persistent and symptomatic for hypogonadism

Referral

Refer to endocrinologist

▶ Endocrinologist | *during/post-referral*

Diagnosis

Patient presents

- Confirm hypogonadism
- Establish the cause
- Remember bone mineral density assessment
- Pass details of relevant patient groups if appropriate (see back page)

Treatment

Recommendation

Testosterone therapy after exclusion of occult prostate cancer (PSA & DRE†) and a baseline haematocrit

- Implants
- Oral therapy
- Long-acting injection
- Short-acting injection
- Buccal tablets
- Gel therapy
- Patches therapy

Assessment

Patient returns for follow-up appointment

Treatment

Poorly effective and / or unsatisfactory for patient

Treatment

Effective and / or satisfactory for patient

Check serum testosterone levels*

Normal testosterone levels

Low testosterone levels

Patient continues with treatment

Yearly / bi-yearly checks with endocrinologist

Ongoing supervision by GP

Make a clinical assessment and consider the following:

- Change the dose of treatment
- Change the formulation

Ongoing assessment

- Review of underlying cause of hypogonadism
- Monitor serum testosterone levels
- Full blood count
- Prostate specific antigen (PSA & DRE)
- Monitor for prostate problems (eg IPSS – see overleaf)

Assess

- Ongoing sexual function
- Mood changes
- Acceptability of treatment
- Monitor for side-effects**
- Prostate problems
- Gynaecomastia
- Acne
- Sleep apnoea
- Laboratory tests****
- Serum testosterone levels
- Haematocrit

If side-effects or issues with treatment

Referral

† Digital rectal examination
 • Timing of blood samples dependent on type of testosterone therapy
 * As advised by endocrinologist

Refer back to / consult with endocrinologist

International Prostate Symptom Score (IPSS)

Please answer the following questions about your urinary symptoms.
Write your score for each question at the end of each row.

Over the past month, how often have you...	Not at all	Less than one time in five	Less than half the time	About half the time	More than half the time	Almost always	Your score
1 ...had a sensation of not emptying your bladder completely after you finished urinating?	0	1	2	3	4	5	
2 ...had to urinate again less than two hours after you finished urinating?	0	1	2	3	4	5	
3 ...stopped and started again several times when you urinated?	0	1	2	3	4	5	
4 ...found it difficult to postpone urination?	0	1	2	3	4	5	
5 ...had a weak urinary stream?	0	1	2	3	4	5	
6 ...had to push or strain to begin urination?	0	1	2	3	4	5	
And finally..	None	Once	Twice	Three times	Four times	Five times or more	
7 Over the past month, how many times did you most typically get up to urinate, from the time you went to bed at night until the time you got up in the morning?	0	1	2	3	4	5	
Add up your total score and write it in the box							Total

The results from this questionnaire will help your doctor to assess if you have an enlarged prostate. This is a common and benign (non-cancerous) condition that often occurs in older men (the results do not help to diagnose prostate cancer). In general, a score of:

- up to 7 indicates mild symptoms
- 8-19 indicates moderate symptoms
- 20-35 indicates severe symptoms

See your doctor to discuss the results if your score indicates moderate or severe symptoms.

For more information about the Bayer Schering Pharma Andrology portfolio please call our medical information department on 01635 563 116



For further information about hypogonadism or pituitary disorders, visit the Pituitary Foundation at www.pituitary.org.uk or call the information support line on 0845 450 0375



For further information about Klinefelter's syndrome, visit the Klinefelter's Syndrome Association UK at www.ksa-uk.co.uk or call 0845 230 0047

Additional reference – ISSAM guidelines, Int J Andrology, Nieschlag 2005

This pathway has been compiled and supported by a grant from Bayer Schering Pharma

Stock code: 7NEB119 | Date of preparation: November 2007