I'M A TESTICULAR CANCER SURVIVOR

SEE ME

Around **20%** of **testicular cancer** survivors experience **testosterone deficiency**[1], which can result in metabolic syndrome and poor cardiac health[2-7]

The European Society for Mediacal Oncology recommends measurement of testosterone levels during follow-up.[8]

PRESCRIBING INFORMATION TESTOGEL® (testosterone) 16.2 MG/G, GEL

For full prescribing information, including side effects, precautions and contraindications, please consult the Summary of Product Characteristics (SPC).

Presentation: Transdermal gel in a multi-dose container, one pump actuation delivers 1.25g of gel containing 20.25mg of testosterone. **Indication:** Testosterone replacement therapy for male hypogonadism when testosterone deficiency has been confirmed by clinical features and biochemical tests. **Dosage and administration:** Cutaneous use. The recommended dose is two pump actuations of gel (i.e. 40.5mg of testosterone) applied once daily. The daily dose should not exceed four pump actuations (81 mg testosterone) per day. Adjustment of dosage should be achieved by increments of one pump actuation, usually based on measurements of blood testosterone levels and/or clinical response. The gel should be administered by the patient himself, onto clean, dry, healthy skin on the right and left upper arms and shoulders. **Contraindications:** Cases of known or suspected cancer of the prostate or breast, known hypersensitivity to testosterone or to any other constituent of the gel. **Warnings and precautions for use:** Testosterone deficiency should be clearly demonstrated by clinical features and confirmed by 2 separate blood testosterone measurements. Testosterone levels should be monitored at baseline and at regular intervals during treatment. In addition, in patients receiving long-term androgen treatment the following laboratory parameters should be checked regularly: haemoglobin, haematocrit (to detect polycythaemia), liver function tests and lipid profile. Testogel may affect results of laboratory tests of thyroid function. Risk of pre-existing prostatic cancer should be excluded and the prostate gland and breast monitored during Testogel treatment. Androgens may accelerate the progression of sub-clinical prostate cancer and benign prostate hyperplasia. Testogel should be used with caution in cancer patients at risk of hypercalcaemia and associated hypercalciuria due to bone metastases; regular monitoring of blood calcium levels is recommended in these patients. Testogel may cause oedema with or without congestive cardiac failure in patients suffering from severe cardiac, hepatic or renal insufficiency or ischaemic heart disease. If this occurs, treatment must be stopped immediately. Testogel should be used with caution in patients with ischaemic heart disease. Testosterone may cause a rise in blood pressure and should be used with caution in men with hypertension. Testogel should be used with caution in patients with thrombophilia or risk factors for venous thromboembolism (VTE), as there have been post-marketing reports of thrombotic events in these patients during testosterone therapy. In thrombophilic patients, VTE cases have been reported even under anticoagulation treatment, therefore continuing testosterone therapy after first thrombotic event should be carefully evaluated. In case of treatment continuation, further measures should be taken to minimise the individual VTE risk. Spermatogenesis may be suppressed leading to adverse effects on semen parameters. Gynaecomastia occasionally develops and occasionally persists. Irritability, nervousness, weight gain, prolonged or frequent erections may indicate excessive androgen exposure requiring dosage adjustment. Testogel should be used with caution in patients with epilepsy and migraine. Do not apply to the genital areas as the high alcohol content may cause local irritation. Testogel is flammable until dry. Testogel can be transferred to other persons by close skin to skin contact. There is limited experience regarding safety and efficacy of Testogel in patients over 65 years of age. Testogel is not indicated for use in women or in children under 18 years of age. Testogel is not a treatment for male impotence or sterility. FOR THE FULL LIST OF WARNINGS AND PRECAUTIONS PLEASE CONSULT SECTION 4.4 OF THE FULL SPC. **Interactions:** May increase the activity of oral anticoagulants. Concomitant administration of testosterone and ACTH or corticosteroids may increase the risk of developing oedema. Testogel may cause changes in insulin sensitivity, glucose intolerance, glycaemic control, blood glucose and glycosylated haemoglobin levels. **Pregnancy and lactation:** Pregnant women must avoid any contact with Testogel application sites. This product may have adverse virilising effects on the foetus. **Undesirable effects:** Local skin reactions include: acne, alopecia, dry skin, skin lesions, contact dermatitis, hair colour changes, rash, sweating, hypertrichosis, application site hypersensitivity, application site pruritus. The following commonly (≥1/100; <1/10) occur with Testogel: emotional symptoms, prostate specific antigen (PSA) increased, increased haematocrit, increased haemoglobin and increased red blood cell count. The following uncommonly (≥1/1000 to <1/100) occur with Testogel: malignant hypertension, flushing, phlebitis, diarrhoea, abdominal distention, oral pain, gynaecomastia, nipple disorder, testicular pain, increased erection and pitting oedema. Other adverse reaction identified during post-approval use of Testogel : testis disorder, headache, dizziness, paraesthesia, vasodilation (hot flushes), deep vein thrombosis, dyspnoea, polycythaemia, anaemia, musculoskeletal pain, gynaecomastia, testis disorder, prostate enlargement, oligospermia, benign prostate hyperplasia, impaired urination, anxiety, depression, aggression, insomnia, nausea, asthenia, oedema, malaise and weight increase. In case of severe application site reactions, treatment should be reviewed and discontinued if necessary.

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Research Communication

Certification in reporting multiparametric magnetic resonance imaging of the prostate: recommendations of a UK consensus meeting

Multiparametric MRI (mpMRI) of the prostate is now recommended as the initial investigation method for men with suspected prostate cancer within both UK and international guidelines. Potential benefits of this pathway include: (i) reductions in the number of men requiring biopsy; (ii) reductions in the diagnoses of indolent cancers unlikely to cause harm, minimising treatment-related complications; (iii) improved detection of clinically significant prostate cancers, particularly for patients with prior negative systematic biopsy; and (iv) improved risk-stratification of diagnosed cancers owing to greater precision in tumour grade and volume determinations.

Successful delivery of the MRI-directed pathway requires imaging to be performed and reported to a sufficiently high standard [1,2]. The test is increasingly being used to 'screen' patients to avoid biopsy, emphasising the need for accurate interpretation. To ensure the utility of prostate MRI, and notably, that the high negative predictive value is preserved with widening uptake, there is a responsibility on UK practitioners that the roll-out is not at the cost of impaired quality in MRI acquisitions and/or reporting. Given the high disease prevalence, image acquisition and reporting cannot be the sole preserve of tertiary referral hospitals. The Prostate Imaging-Reporting and Data System (PI-RADS) guidelines have set minimal technical standards for MR image acquisition [3]; however, consensus is lacking on the experience levels required to independently report prostate MRI, or indeed, how reporter competence can be ensured. A panel of UK experts in the field of MRI and/or prostate cancer management was convened to address the perceived need for credentialing in prostate mpMRI interpretation for primary diagnosis and to identify the components of such a process.

A list of 13 UK panellists participated in the consensus meeting, encompassing 11 separate NHS centres, with representations from Scotland, Wales, and eight cancer alliances within England. An independent chair moderated the process, which followed the University of California at Los Angeles (UCLA)-Research and Development Corporation (RAND) appropriateness method (Data S1). In all, 211 statements related to oversight, applicant, validity period, and certification elements were rated for agreement on a 9-point scale. For a statement to reach 'consensus', a panel majority score was required. Agreement for a statement was calculated using the median score from all panellists, mirroring previous work [4]. A median score of 1–3 indicated 'disagreement' with a statement, 4–6 'uncertainty', and 7–9 'agreement'.

Consensus was reached in 141/211 questions (67%); including for 43/55 stem items (Data S2–S3). The panel agreed that there was a need for an evaluation process relating to the interpretation of prostate mpMRI performed in men with suspect prostate cancers and that this should be termed 'certification'. This process should be performed at an individual level, and there should be a re-evaluation after a specified time (Data S4). Three certification levels were agreed; Level 1 expectations are to have a working knowledge of the methods and diagnostic utility of MRI. It was agreed that Level 1 should be open to consultants and speciality registrars/trainees in Radiology, Urology or Oncology, and also to radiographers and medical physicists. Level 2 is the threshold for independent reporting of MRI; it was agreed that Level 2 should be available to speciality registrars/trainees and consultants in radiology; however, other applicants may be considered on an individual basis in exceptional circumstances. Level 3 incorporates additional teaching and/or research experience and is appropriate for those running prostate MRI diagnostic services; it was agreed that this should only be available to consultants in radiology. Consensus was reached that attendance of at least one prostate MRI course in the preceding 3 years was mandatory at all levels, along with a variable number of continuing professional development (CPD) credits, attendance at prostate multidisciplinary team (MDT) meetings, and for a logbook of cases depending on the level of certification. An examination was only felt to be appropriate for entry to Level 2 certification, and that Level 3 entry required additional demonstration of teaching and/or research experience (Table 1). The format of an examination is yet to be determined. Digital quality assurance systems that incorporate online case-based examinations are ideally suited for this purpose, but in the shorter term, written and image-based multiple choice questions examination are more likely to be used. CPD credits can be obtained from any national or international organisations and have to be prostate related, but not specifically limited to diagnostic prostate MRI.

[The copyright line for this article was changed on 04 December 2020 after original online publication]

Table 1 Summary of recommendations by certification level.

Items	Level 1	Level 2	Level 3
Who can apply	Consultants or SpRs in Diagnostic Radiology, Urology and Oncology, Diagnostic Radiographers and MRI physicists	SpRs in Radiology Consultants in Radiology*	Consultants in Radiology
Requires working knowledge of MRI methods/utility	Yes	Yes	Yes
Able to independently report prostate MRI	No	Yes	Yes
Can run a prostate MRI service	No	No	Yes
Demonstration of research/teaching activity	No	No	Yes
Attendance at prostate MRI course in the last 3 years	Yes	Yes	Yes
Number of yearly MDT attendances	4/year (every 3 months)	12/year (every month)	12–21/year
Annual CPD credits†	10	20	20–30
Maximum % of self-directed CPD credits	25–50	≤50	25–75
Number of logbook cases required‡	20	100	100
Maximum % of logbook cases from workshops	Up to 50	10–25	10–50
Examination required	No	Yes	No
Term	3 years	3 years	3 years

*Green = consensus agreement; orange = consensus achieved for a range of values; red = highest agreement scoring item is listed, with no consensus achieved. *Other applicants may be considered in exceptional circumstances. †CPD credits can be from any national or international organisation, but must be prostate-related. ‡Should comprise ≥75% biopsy naïve cases and ≥50% DCE studies. SpRs, specialist Registrars (trainees) within specialty.*

Consensus was not achieved for the exact number of logbook cases required at any level; however, it was agreed that the logbook case mix should include ≥75% biopsy naïve and/or prior negative biopsy cases and ≥50% dynamic contrast-enhanced (DCE mpMRI) studies. There was consensus that applications should be assessed by an administrator followed by two panel members, and only requires review by the certification lead in cases of arbitration.

This process complements the European Society of Urogenital Radiology (ESUR)/European Association of Urology Section of Urologic Imaging (ESUI) consensus paper on MRI acquisition, interpretation, and training and provides more explicit detail on how interpretation standards should be met [5]. It is hoped that the three tiers of expertise proposed will help deliver in-breadth and in-depth the potential benefits of the pre-biopsy prostate MRI pathway [4]. The authors wish to stress that non-certification does not imply unsatisfactory MRI practice. Likewise, 'certification' does not hold any official or regulatory status and will be voluntary. The central purpose of the certification process will be to offer individuals a kite-mark of their MRI reporting quality demonstrating a minimum level of expertise has been obtained, which is comparable across similar practitioners in the UK, and providing supportive evidence within the UK framework of appraisal and re-validation. The expectation is that in seeking and obtaining certification, reporting quality will rise and over time ensure consistency and accuracy for the MRI pathway for suspected prostate cancer. The next steps in the process include developing administrative support towards a launch date, and the development of an online case repository that can potentially be used for training, logbook accrual, and examination purposes.

A key consideration in the certification process has been where to set competency bars for each level: too low, and the quality for service delivery is not attained or maintained; too high and the process may be seen as off-putting, limiting the available reporter pool at the time of increasing demand. Consensus was reached on several key components of the certification process including who can apply at different levels, prostate course attendance, MDT attendance, need for examination, the validity period, and, for Levels 1–2, the number of CPD credits required. A notable exception was the number of logbook cases required. This is an area of active debate in the literature, with evidence suggesting 200–300 cases should be reported in a real-world setting to achieve expertise [6,7], and 50–100 cases/year [4,5,8] to maintain competence.

A limitation of any consensus process is that the results only reflect the opinions of the panel and may be prone to biases, including potential for pre-selection bias in panel members invited to participate. Each panellist only had one vote, and an independent chair ensured balanced debates, with all viewpoints aired and without individual members dominating discussions. The number of panellists was relatively small; however, this was comparable to other UK and European consensus processes [4]. Furthermore, the inclusion of panellists from different specialities, working in different healthcare settings, and with a broad geographical spread, ensured that opinion was not based on a narrow scope of practice. Future work is required comparing reporters with certification vs those without to measure any potential improvements in patient-related outcomes.

In conclusion, consensus was reached on the need for credentialing in prostate-MRI reporting for directing biopsies, with criteria for three certification levels proposed. The

certification process should aid the uniform delivery of the MRI-directed pathway in men with suspected prostate cancer.

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Conflict of Interest

Dr. Ahmed reports grants, personal fees and other from Sonacare Inc, personal fees and other from Boston Scientific, grants and personal fees from Sophiris Bio, outside the submitted work. Dr. Staffurth reports personal fees and non-financial support from AstraZeneca, personal fees and non-financial support from Janssen, personal fees from Astellas, from null, outside the submitted work.

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Abbreviations: CPD, continuing professional development; DCE, dynamic contrast-enhanced; MDT, multidisciplinary team; mpMRI, multiparametric MRI.

Supporting Information

Additional Supporting Information may be found in the online version of this article:

Data S1. Detailed methods.
Data S2. Number (%) of items reaching consensus in each section of the questionnaire.
Data S3. Agreement and consensus data for all items.
Data S4. Detailed results.