The NHS England Clinical Expert Group for prostate cancer: Guidance to support the optimal timed pathway for prostate cancer

January 2019

Background

The Clinical Expert Group (CEG) for prostate cancer was established by NHS England in December 2017 to provide clinical leadership and guidance that supports NHS England policy development and delivers services' transformation, in line with the Five Year Forward View.

Its membership contains specialist expertise across the prostate cancer pathway who provide clinical opinion reflective of practice across England (appendix 1)

Introduction

This Guidance draws on the clinical expertise of the CEG membership to provide practice recommendations to support the best practice implementation of the NHS England Optimal Timed Prostate Cancer Pathway that was published in 2019. It is intended for use by Cancer Alliances and their prostate cancer clinical leads.

The Guidance covers PSA thresholds for referral, mpMRI before biopsy, biopsy types and pathology reporting.

1. PSA referral threshold recommendations

The CEG supported the 3ng/ml referral threshold for suspected cancer that is recommended by the Prostate Risk Management Programme (PCRMP) and recommended that it replace the age-related referral thresholds that have been in use across the NHS.

PSA 3ng/ml rationale

The CEG considers this threshold to be reasonable for men aged 50-69, when used in conjunction with MRI as a triage prior to biopsy. This threshold should be used alongside a discussion with each patient that explains the variable risk of missing an important cancer, should the patient choose not to have an immediate biopsy after a non-suspicious mpMRI. The clinical expert group feel this is a safe approach that would facilitate earlier diagnosis of significant prostate cancer without causing more over-diagnosis.

Follow up PSA test in men with a 3ng/ml or higher

Evidence from the ProtecT trial showed that a referral should be pursued when there is a variance of 20 per cent between the two tests. However, it has been noted that this evidence was based on TRUS and DRE and did not include MRI imaging. Other practice evidence was provided that suggested 2 PSA tests did not make a difference in more than 5 percent of men. It was therefore agreed not to recommend two PSA tests prior to referral for suspected prostate cancer and that this should be a local decision.

The group also referred to criteria that sets out when not to accept a PSA test result and this could be used to supplement the 3ng/ml threshold recommendation. These criteria include: recent urine infection, recent retention of urine or catheterization.

Men at higher than average risk of prostate cancer

The CEG acknowledged that there is limited evidence to determine the PSA threshold for men who are at higher than average risk (Black ethnicity and/or family history). The CEG suggests data from several British Medical Journal papers that established 1.5ng/ml level at age 45-49 demonstrated that no further testing was required for at least 5 years and those with PSA 1.5-2.9 should have a greater frequency of testing (every 2-3 years)[1-3]

The CEG has agreed that men in this category should not necessarily be referred immediately but followed-up with PSA levels measured more frequently in the community. The group were also mindful that these data were based on TRUS biopsy practice. The group also agreed that this should be the PSA threshold for men aged 40-49 who have other risk factors for prostate cancer who seek PSA testing.

In the instance where the GP might wish to refer a man with a PSA less than 3.0 but above 1.5 to evaluate their risk more accurately, the group recommended that these men should receive a routine referral, rather than a referral on the 2 week wait; however, this point would be clarified with advice from NHS England on the feasibility of such a classification of this referral.

Lack of evidence makes it challenging to recommend the PSA thresholds for men aged 70 and over. They agreed on a PSA of 5ng/ml or greater for men aged 70 years or older, based on the Cancer Vanguard consensus meetings.

2. mpMRI before biopsy protocols

The introduction of high-quality multiparametric (mp) MRI before biopsy as part of a new diagnostic pathway is important to ensure best outcomes for all patients with suspected prostate cancer. All centres across the UK should transform their diagnostic pathways and implement mpMRI before biopsy, which requires the following MR sequences: 1·5 Tesla magnetic field strength and a pelvic phased-array coil. T1-weighted, T2-weighted, diffusion-weighted and dynamic gadolinium contrast-enhanced imaging sequences. To achieve high-quality, all centres should follow the standards as set out in the UK Clinical Consensus. [4]

The Consensus also outlines and recommends that radiologists who report mpMRI scans should undertake at least 100 scans before reporting independently, and will need to report 250 scans a year to be considered an expert. The reporting can either use PI-RADS (for use by radiologists while training and developing expertise) or Likert (for recommended use) scoring systems.

There are certain requirements to be able to conduct mpMRI before biopsy [5]so for example men who have an UTI or are on antibiotics should come off the suspected prostate cancer pathway.

Conducting mpMRI before enables at least 27% of men to avoid an immediate biopsy [5]. The decision to rule men out of immediate biopsy after a negative MRI and no other risk factors (ethnicity or family history) should be supported by counselling, more information can be found here: https://www.nice.org.uk/guidance/GID-NG10057/documents/draft-guideline. The ultimate decision should be based on patient choice and the small but variable risk of missing the diagnosis of an important cancer.

In the future, it is hoped that radiologists will receive accreditation for reporting on mpMRI. The Clinical Expert Group suggests that an accreditation process is established by the British Society of Urogenital Radiologists (BSUR) and that it is CME (continuing medical education) and exam based.

3. Biopsy types

Following a suspicious mpMRI, a biopsy of the prostate will be carried out. There are different techniques to conduct biopsies, namely systematic and targeted biopsies. It is recommended to conduct MRI-targeted biopsy, which means using the MRI images to guide the biopsy rather than performing a systematic biopsy alone. Targeting can either be a "cognitive" procedure, i.e. relying on the operator, or a software-based Fusion process.

Targeted biopsies should use between 3 and 6 cores for each target, dependent on the size of the lesion being sampled, to minimise the demand on pathology services. Centres carrying out systematic biopsies need not sample the same areas that targeted cores sampled, so that the overall number of cores should be consistent with approximately 12 cores. Targeted biopsies should be identified separately. Centres in which non-targeted biopsies had a low pick up rate for insignificant cancers may choose to carry out targeted biopsies alone in select groups of men, to be defined by local clinical practice guidelines.

The CEG recommended that centres and Alliances should set a target of 2020-2021 to move all biopsies to the transperineal route under local anesthetic (LA)/sedation. This should result in a reduction in the levels of biopsy-induced infection, sepsis and antibiotic resistance (antibiotic stewardship). Training will be required, alongside support for implementation, but both transperineal LA grid-based and LA freehand approaches are now possible, and being carried out in numerous centres in hundreds of patients every year [6-11].

Routine saturation biopsies (whether transperineal template mapping or transperineal sectoral biopsies) risk patient burden and risk of over-diagnosis of insignificant cancers, leading to overtreatment. These should not be used as a routine biopsy strategy and should be reserved for cases of diagnostic uncertainty following an initial biopsy.

4. Pathology reporting

Currently there are no processes in place regarding pathology reporting. The CEG has looked at ways in which pathology reporting could be streamlined and made uniform to only include information which will be used by urologists.

The maximal amount of cancer in millimetres in any one core has been considered by the group to be a better risk strata than the percentage of cancer involvement as this is heavily reliant on total core length. It was agreed that best practice is to also report the percentage of pattern 4 in a 3+4 Gleason (which offers a strong prognostic indicator in intermediate risk disease).

The CEG agreed that the overall Gleason score for a targeted lesion should be based on the overall proportion of primary and secondary patterns from all positive cores from that lesion as this would be representative of the lesion's actual Gleason score. In a Gleason 7 lesion, a maximal Gleason score in any one core of 4+4 would lead to risk shift and should not be used for treatment advice, if the lesion overall and the patient overall have Gleason 7 score.

The number of positive cores which are positive and the percentage of cores which are positive are risk criteria developed for TRUS biopsy without targeting and in the setting of targeted biopsies should not be used for risk classification.

Appendix 1

Membership - NHS England Clinical Expert Group for prostate cancer

Professor Hashim Ahmed, Chair - Professor and Chair, Division of Surgery, Department of Surgery and Cancer at Imperial College London and Honorary Consultant Urological Surgeon, Imperial Urology, Imperial College Healthcare NHS Trust

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Appendix 2

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