Active surveillance in prostate cancer

Can MRI replace biopsies?

A. Villers, J. Olivier, P. Puech,
Department of urology
Lille University-France
EAU Guidelines

- Considerable variations among studies regarding patient selection, follow-up schedule, the use of confirmatory or repeat biopsy and MRI.

Briganti,A  EAU Position AS  Eur Urol 2018
Introduction

• Can per-protocol repeat biopsy at one year be avoided for men on AS and replaced by:

• Per-protocol MRI before biopsy at one year, then every x years?
• For cause only MRI during follow-up, if PSA kinetics suspicious

• Followed by targeted biopsies if MRI shows lesion score $\geq 3$
• Be sufficient to detect progression?
Series of 60 men on AS (PSA < 10, low risk, Epstein criteria)

for MRI predicting recategorification (cases no longer fulfilling Epstein criteria at biopsy)

PPV : 83% (95% CI 73–93)
NPV : 81% (95% CI 71–91)
Series of men on AS based on MRI-TB

• 196 men on AS with targeted biopsies of visible tumor at MRI, GS 3+3
  • 18.0% progressed to GS 3+4

• 152 men on AS with targeted biopsies of visible tumor at MRI, GS 3+3
  • 22.4% progressed to GS 3+4

• For MRI prediction of progression,
  • PPV 53% (95% CI: 28%–77%)
  • NPV 80% (95% CI: 65%–91%),

Nassiri, J Urol 2017
Walton-Diaz, J Urol 2015
EAU Guidelines

• At present mp-MRI should not solely replace repeat biopsy during AS.

• Moreover, use of mp-MRI prior to any follow-up biopsy is not supported by any strong evidence.

• Robust data on the use of repeat mp-MRI instead of repeat biopsy in AS is currently lacking.

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In patients considered for AS, use of MRI and targeted biopsies at entry is associated with a progression rate of 14-16% at 2 years.

1-Thurtle, BJU, 2018
2-Olivier, Submitted 2018
Lille series. 149 patients on AS from 2007-2015

Low risk Pca (GS 6, ≤ 3 positive Bx, MCCL≤5mm), Non-visible tumour at MRI at entry and followed for > 24 mo

Group 1 : 78 pts per protocol repeat Bx at 1yr (< 2012)
Group 2 : 71 pts for cause MRI only (> 2012)

Surveillance tests for tumour progression for both groups: MRI-TB biopsies and SB if PSA-V > 0.75 ng/ml/year, based on 6-mo PSA dosages

Olivier, Villers Submitted 2018
Objectives at median FU of 38 mo

Main objectives:
• To compare the 2-year detection rates of tumour reclassification/progression and AS discontinuation between groups

Secondary objectives
• To estimate the diagnostic power of PSA-V to predict the risk of tumour reclassification/progression between groups
Results

2-yr tumor progression rate: overall: 14% p=0.56
Results

2-years AS discontinuation

Curative treatment rate

Group 1
Group 2

p=0.054
Results Group 1 \( n = 78 \) patients

PSA velocity and progression at repeat biopsies

Se : 92%
Sp : 91%
PPV : 67%
NPV : 98%

PSAV AUC : 0.92
Conclusion: EAU Guidelines

• Low-risk men with negative mp-MRI may have indeed favorable outcome on AS, regardless of the extent of low-grade cancer at biopsy.

• The follow-up strategy still relies mainly on clinical and biopsy assessment.

• It is based on serial digital rectal examination (at least once a year), PSA (at least once every 6 mo), and repeated biopsy (at a minimum interval of 3–5 yr). mp-MRI cannot be used as a stand-alone tool to trigger follow-up biopsies.
Conclusion: My rationale

- One year repeat biopsies may be avoided in cases on AS with non-visible tumour at MRI at inclusion

- MRI (as for biopsy naive patients) should be considered as a triage test before for cause biopsy if PSA kinetics suspicious

- Need to perform a prospective randomised study:
  - To confirm the safety of not to perform repeat biopsies in AS patient if non visible tumour at MRI at entry
  - To confirm the performance of PSA kinetics as a diagnostic test for PCa progression under AS.