Disclosure Information

I hereby declare that I have had business or personal interests in the following industrial enterprises since 1 September 2016:

Name of the enterprise / Nature of the interest

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>Interest</th>
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<tr>
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<td>Nothing to disclose</td>
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</table>
Impact of Transperineal Template Biopsies on Prostatic Biopsy Processing and Analysis in Europe

Solène-Florence Kammerer-Jacquet, Eva Compérat, Lars Egevad, Ondra Hes, Jon Oxley, Murali Varma, Glen Kristiansen, Daniel Berney
Transperineal template prostate biopsies (TTPB): Procedure

- General anaesthetic
- Ultrasound probe in the rectum
- Flexible tube into the urethra
- Grid against the perineum with holes
- Biopsy needle inserted through
Transperineal template prostate biopsies (TTPB) :
Indications

• Unexpected negative transrectal ultrasound biopsies (TRUSB)
• Correlation with MRI findings
• During active surveillance
• Before focal treatment
Objective

What is the impact of TTPB on processing and analysis in pathology laboratories across Europe?
Survey

- Proposed by the board of ENUP
- Web-based survey distributed to all members of ENUP
- Included:
  - demographic questions
  - how were specimens received and processed
  - the comparison with TRUSB
  - the impact of this practice
Responders across Europe

- 244 responders from 22 countries:
  - Germany (n=50, 20.5%),
  - the United Kingdom (UK) (n=45, 18.4%),
  - Spain (n=21, 8.6%)
  - Norway (n=20, 8.2%)
- 68.4% received template biopsies (UK 82.2%)
- No differences according to the type of practice
Number of pots

Biopsies were received in:
• 12 or fewer pots in 64.8% of cases (n=103),
• 12 to 24 pots in 27% (n=43) received
• > 24 pots in 8.2% (n=13)
• Maximum: 121!
TPTB management

• Number of cores per cassette:
  • one core per cassette in 39.5% (n=62)
  • 2 cores/cassette in 21.0% (n=33)
  • 3 cores in 17.2% (n=27)
  • more than 3 cores in 27.2% (n=35).

• Number of H&E levels
  • Three levels in 48.3% (n=73)
  • 2 levels in 19.9% (n=30)

• Number of serial sections
  • One section in 29.9% (n=44)
  • 2 sections in 24.5% (n=36)
  • 3 sections in 32.7% (n=48)

• Unstained spare sections in 45.1% (n=65)

• No significant differences between TPTB and TRUSB
Pathological report

- Number of positive cores ✓ (100%)
- Extent per core / per region ✓ (82.3 and 67.1%)
- Greatest involvement per core ✓ (69.4%)
- Total involvement ✓ (42.2%)
- Discontinuous and continuous infiltrates ✓ (45.4%)
- Gleason score each site / overall score ✓ (100%)
- Map to assist tumour location ✓ (28.5%)
**CLINICAL HISTORY**
PSA: 3.9. Abnormal zones on MRI - 6, 14, 18, 15, 19.

**PHOTOMICROGRAPH**
Prostatic adenocarcinoma (Gleason 3+3) with perineural invasion. Specimen K located in the left lateral region.

**GROSS DESCRIPTION**
PROSTATE, NEEDLE BIOPSIES:
The specimen was received in 20 vials containing pink-tan 1 mm diameter prostate biopsies in formalin; submitted in toto.

<table>
<thead>
<tr>
<th>Site</th>
<th>Length</th>
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</thead>
<tbody>
<tr>
<td>(A) L. Para Ant Apex</td>
<td>10, 5, 3 mm - Green</td>
</tr>
<tr>
<td>(B) L. Para Ant Base</td>
<td>9 mm - Orange</td>
</tr>
<tr>
<td>(C) R. Para Ant Apex</td>
<td>12, 9 mm - Green</td>
</tr>
<tr>
<td>(D) R. Para Ant Base</td>
<td>12 mm - Orange</td>
</tr>
<tr>
<td>(E) Midline Apex</td>
<td>10 mm - Green</td>
</tr>
<tr>
<td>(F) Midline Base</td>
<td>10, 7 mm - Orange</td>
</tr>
<tr>
<td>(G) 7. L. Med Ant Apex</td>
<td>10 mm - Green</td>
</tr>
<tr>
<td>(H) 8. L. Med Ant Base</td>
<td>15 mm - Orange</td>
</tr>
<tr>
<td>(I) 9. R. Med Ant Apex</td>
<td>10, 3 mm - Green</td>
</tr>
<tr>
<td>(J) 10. R. Med Ant Base</td>
<td>8. 4 mm - Orange</td>
</tr>
<tr>
<td>(K) 11. L. Lateral</td>
<td>7, 6, 5, 5 + fragments mm - Green</td>
</tr>
<tr>
<td>(L) 12. R. Lateral</td>
<td>10, 6, 7, 5 + fragments mm - Green</td>
</tr>
<tr>
<td>(M) 13. L. Para Post Apex</td>
<td>13 mm - Green</td>
</tr>
<tr>
<td>(N) 14. L. Para Post Base</td>
<td>14 mm - Orange</td>
</tr>
<tr>
<td>(O) 15. R. Para Post Apex</td>
<td>12, 10 mm - Green</td>
</tr>
<tr>
<td>(P) 16. R. Para Post Base</td>
<td>15, 8, 3 mm - Orange</td>
</tr>
<tr>
<td>(Q) 17. L. Med Post Apex</td>
<td>8 mm - Green</td>
</tr>
<tr>
<td>(R) 18. L. Med Post Base</td>
<td>12, 12 mm - Orange</td>
</tr>
<tr>
<td>(S) 19. R. Med Post Apex</td>
<td>13, 10 mm cm (Green)</td>
</tr>
<tr>
<td>(T) 20. R. Med Post Base</td>
<td>14, 10 mm cm (Orange)</td>
</tr>
<tr>
<td></td>
<td>Diagnosis</td>
</tr>
<tr>
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<td>----------------------------------------------------------------------------</td>
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<tr>
<td>B</td>
<td>2. L. Para Ant Base: Connective tissue fragments, no prostate glands identified.</td>
</tr>
<tr>
<td>C</td>
<td>3. R. Para Ant Apex: Benign prostatic tissue.</td>
</tr>
<tr>
<td>D</td>
<td>4. R. Para Ant Base: Benign prostatic tissue.</td>
</tr>
<tr>
<td>F</td>
<td>6. Midline Base: Benign prostatic tissue.</td>
</tr>
<tr>
<td>G</td>
<td>7. L. Med Ant Apex: Benign prostatic tissue.</td>
</tr>
<tr>
<td>H</td>
<td>8. L. Med Ant Base: ADENOCARCINOMA (GLEASON SCORE 3+3 = 6) INVOLVING 30% OF THE SPECIMEN (1 OF 1 CORES CONTAIN CANCER). Maximum cancer length 5mm.</td>
</tr>
<tr>
<td>M</td>
<td>13. L. Para Post Apex: Benign prostatic tissue.</td>
</tr>
<tr>
<td>N</td>
<td>14. L. Para Post Base: ADENOCARCINOMA (GLEASON SCORE 3+3 = 6) INVOLVING 20% OF THE SPECIMEN (1 OF 1 CORES CONTAIN CANCER). Maximum cancer length 2.5mm.</td>
</tr>
<tr>
<td>Q</td>
<td>17. L. Med Post Apex: ADENOCARCINOMA (GLEASON SCORE 3+3 = 6) INVOLVING 40% OF THE SPECIMEN (1 OF 1 CORES CONTAIN CANCER). Maximum cancer length 3.5mm.</td>
</tr>
<tr>
<td>R</td>
<td>18. L. Med Post Base: ADENOCARCINOMA (GLEASON SCORE 3+3 = 6) INVOLVING 15% OF THE SPECIMEN (1 OF 2 CORES CONTAIN CANCER). Maximum cancer length 2mm.</td>
</tr>
</tbody>
</table>

**FINAL REPORT:**
- 38 cores of tissue from 20 sites
- 37 cores of prostatic tissue from 19 sites
- 1 core of fibromuscular connective tissue from one site
- Adenocarcinoma at 5 sites (bilateral)
- Overall Gleason score (3+3)
- Maximal Gleason score (3+3)
- Maximal length of cancer 5mm (30%)
- Perineural invasion
- Atypical epithelial hyperplasia
- Mild acute inflammation
- Mild chronic inflammation
Twenty Sector Biopsy

Modified Barzilai Zones
1 - Left Parasagittal Anterior Apex
2 - Left Parasagittal Anterior Base
3 - Right Parasagittal Anterior Apex
4 - Right Parasagittal Anterior Base
5 - Midline Apex
6 - Midline Base
7 - Left Medial Anterior Apex
8 - Left Medial Anterior Base
9 - Right Medial Anterior Apex
10 - Right Medial Anterior Base
11 - Left Lateral
12 - Right Lateral
13 - Left Parasagittal Posterior Apex
14 - Left Parasagittal Posterior Base
15 - Right Parasagittal Posterior Apex
16 - Right Parasagittal Posterior Base
17 - Left Medial Posterior Apex
18 - Left Medial Posterior Base
19 - Right Medial Posterior Apex
20 - Right Medial Posterior Base

HGPIN / atypical acini
Gleason = 3+3 up to 3mm
Gleason = 3+4 AND/OR Max Cancer length 4-5mm
Gleason >/= 4+3 AND/OR Max cancer length >/= 6mm
TTPB impact on laboratory workload

- No impact (12%)
- Slight impact (32.4%)
- Moderate impact (36.6%)
- Adverse impact (19%)

⇒ Extra costs negotiated in 27% (n=31)
Conclusion

• Most laboratories in Europe process template biopsies and report them similarly to TRUSB.
• The main difficulty is the extra work due to the increased number of cores that remains uncosted in most centres.
• Guidance is needed for workload impact and minimum standards of processing.