**Table 1. Detailed MRI scan parameters at 1.5T**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **TR** | **TE** | **Flip angle/**  **degrees** | **Plane** | **Slice thickness**  **(gap)** | **Matrix size** | **Field of view /mm** | **Time for scan** |
| **1.** T2 TSE | 5170 | 92 | 180 | Axial, coronal | 3mm (10% gap) | 256x256 | 180x180 | 3m 54s (ax), 4m18s (cor) |
| **2.** VIBE fat sat | 5.61 | 2.52 | 15 | axial | 3mm | 192x192 | 260x260 | 7m (17s per acquisition) |
| **3.** Diffusion  (b values:  0, 150, 500, 1000) | 2200 | Min (<98) |  | axial | 5mm | 172x172 | 260x260 | 5m 44s  (16 averages) |
| **4.**  Diffusion (b=1400) | 2200 | Min (<98) |  | axial | 5mm | 172x172 | 320x320 | 3m 39s  (32 averages) |

**Table 2. Detailed MRI scan parameters at 3T**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **TR** | **TE** | **Flip angle/**  **degrees** | **Plane** | **Slice thickness**  **(gap)** | **Matrix size** | **Field of view /mm** | **Time for scan** |
| **1.** T2 TSE | 7340 | 101 | 150 | Axial, coronal | 3mm (10% gap) | 320 x 310 | 200x200 | 5 min (ax), 5 min 20s (cor) |
| **2.** VIBE fat sat | 4.1 | 1.5 | 10 | axial | 3mm | 256x256 | 250x250 | 5 min (20 15s repititions) |
| **3.** Diffusion  (b values:  0, 100, 300, 800, 1000) | 4300 | 80 |  | axial | 5mm | 126 x 81 | 25 x 21 | 5m 58s  (6 averages) |
| **4.**  Diffusion (b=2000) | 7500 | 79 |  | axial | 5mm | 126 x 81 | 25 x 21 | 5m 34s  (14 averages) |

**Table 3. Baseline demographics of 138 men undergoing mp-MRI followed by template prostate mapping**

|  |  |
| --- | --- |
| Age, years (median, range) | 62 (41-82) |
| PSA (median, range) | 5.8 (1.2-20) |
| Prostate volume (median, range) | 40 (16-137) |
| Number of sectors with no cancer on TPM, N (%) | 117/258 (45%) |
| Number of sectors with “Any cancer” on TPM, N (%) | 141/258 (55%) |
| Number of biopsies at TPM (median, range) | 41 (20-93) |
| Gleason Score on TPM, N (%) |  |
| 6 | 87/141 (62%) |
| 7 (3+4) | 41/141 (29%) |
| 7 (4+3) | 8/141 (6%) |
| 8 | 3/141 (2%) |
| 9 (4+5) | 2/141 (1%) |

**Table 4: The performance characteristics of mp-MRI with a radiological score of ≥ 3 to detect and rule-out clinically significant cancer on TPM defined by a number of thresholds at half prostate level (Primary outcome) (95% confidence intervals in parentheses)**

Classification ROI TP FN TN FP SEN SPEC PPV NPV

**UCL2 258 72 5 42 139 94 23 34 89**

**(88-99) (17-29) (28-40) (79-98)**

UCL1 258 45 1 64 166 98 22 21 98

(93-100) (16-27) (15-27) (93-100)

Gleason 4+3 258 13 0 47 198 100 19 6 100

(100-100)(14-24) (3-10) (100-100)

Gleason 3+4 258 50 4 43 161 93 21 24 92

(85-100) (15-27) (18-30) (83-100)

CCLmax ≥6 258 39 1 46 172 98 21 19 98

(91-100) (15-27) (13-24) (93-100)

CCLmax ≥4 258 59 4 43 152 94 22 28 91

(87-99) (16-28) (23-34) (82-98)

Any cancer 258 127 14 33 84 90 28 60 70

(86-95) (20-37) (53-67) (55-84)

**Table 5. The performance characteristics of mp-MRI with a radiological score of ≥ 4 to detect and rule-out clinically significant cancer on TPM defined by a number of thresholds at half prostate level (secondary outcomes) (95% confidence intervals in parentheses)**

Classification ROI TP FN TN FP SEN SPEC PPV NPV

**UCL2 258 52 25 124 57 68 69 48 83**

**(56-78) (61-76) (38-58) (77-89)**

UCL1 258 37 9 140 72 81 66 34 94

(68-91) (60-73) (25-44) (90-97)

Gleason 4+3 258 12 1 148 97 92 61 11 99

(73-100) (54-67) (5-17) (97-100)

Gleason 3+4 258 38 16 133 71 70 65 35 89

(57-81) (58-71) (25-44) (84-994)

CCLmax ≥6 258 32 8 141 77 80 65 30 95

(66-92) (58-72) (21-39) (91-98)

CCLmax ≥4 258 45 18 131 64 71 67 42 88

(58-83) (60-75) (32-51) (82-93)

Any cancer 258 79 62 87 30 56 75 73 58

(48-64) (65-83) (64-81) (50-67)

**Table 6. Area under the receiver operating characteristic curves for different definitions of clinically significant cancer at mpMRI score 1-5.**

|  |  |
| --- | --- |
|  | AUROC |
| UCL1 | 0.78 (0.71, 0.84) |
| UCL2 | 0.72 (0.65, 0.79) |
| Any cancer | 0.70 (0.63, 0.76) |
| Gleason 4+3 | 0.79 (0.69, 0.87) |
| Gleason 3+4 | 0.71 (0.63, 0.78) |
| CCL max ≥ 6 | 0.78 (0.69, 0.84) |
| CCL max ≥ 4 | 0.73 (0.66, 0.80) |