MULTI-PARAMETRIC MRI ENHANCES DETECTION OF SIGNIFICANT TUMOR IN PATIENTS ON ACTIVE SURVEILLANCE FOR PROSTATE CANCER

P.C. Black1, T. Walshe1, J. Aning1, A.C. Harris2, S.D. Chang2, A.I. So1, M.E. Gleave1, L. Machan2, S.L. Goldenberg1

1 Urologic Sciences, University of British Columbia, Canada
2 Radiology, University of British Columbia, Canada

Objective:
Multi-parametric MRI of the prostate (mpMRI-P) offers a method to detect the lesions which may be located outside the usual template of a transrectal ultrasound guided biopsy (TRUSBx), and fusion biopsy enables sampling of them. Here we investigated the utility of mpMRI-P in patients on active surveillance (AS) for the management of lower risk prostate cancer (CaP).

Materials & Methods:
We reviewed the charts of 603 patients on AS for localized CaP at the Vancouver Prostate Centre. Of these patients 110 had a mpMRI-P prior to repeat TRUSBx, and selected patients underwent MRI-TRUS fusion biopsy based on the mpMRI-P findings, in addition to a standard biopsy. The results of fusion biopsy cores were compared to the standard biopsy cores.

Results:
mpMRI-P detected 112 suspicious lesion in 72 (65%) patients. Of these, 80 (72%) were PIRADS 3 lesions and 32(28%) PIRADS 4 or 5. Fusion biopsy was carried out in 65 of these patients (37 true and 28 cognitive). Gleason grade progression compared to previous biopsy was detected in 11 (10%) patients in the fusion cores, in 7 (6.3%) patients in the standard cores, and in 3 (2.7%) patients in both fusion and standard cores. Two patients discontinued AS due to size increase of a lesion on mpMRI-P. mpMRI-P with fusion biopsy was responsible for the determination of disease progression in 13(11.8%) cases.

Conclusions: These preliminary findings suggest that mpMRI-P with subsequent fusion biopsy enhances the identification of AS patients requiring definitive treatment.