

## Are confirmatory biopsies needed in patients on active surveillance who underwent upfront MRI with possible targeted biopsy?

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**Introduction & Objectives:** The EAU guidelines recommend to omit confirmatory biopsies in patients on active surveillance (AS) if upfront MRI with systematic (SBx) and targeted (TBx) biopsies are performed (strength rating: weak). This study aims to determine the rate of Grade Group (GG) reclassification at confirmatory biopsies in patients on AS who underwent upfront MRI with TBx.

**Materials & Methods:** We selected patients included in the PRIAS study who underwent upfront MRI or MRI within six months after inclusion together with TBx in lesions ( $\geq$  PIRADS 3). All patients underwent a second MRI with confirmatory biopsies within two years after inclusion.

**Results:** Two hundred twelve patients met the inclusion criteria and were analyzed. The median time between the two MRIs was 12 (interquartile range 10-14) months. Sixty-nine percent of the patients (146/212) had a lesion on MRI. Of the 66 patients with no lesion on second MRI, 2(3,0%) and 0(0%) patients reclassified to GG $\geq$ 2 and  $\geq$ 3. Of all patients with PIRADS 3, 9(22%) and 3(7.3%) patients reclassified to GG $\geq$ 2 and  $\geq$ 3, for PIRADS 4 these numbers are 19(26%) and 8(11%), and for PIRADS 5, 10(32%) and 5(16%) (Table 1). The outcome of both SBx and TBx was known in 111 patients. By not performing SBx 6/32(19%) and 2/14(14%) of the reclassification to GG $\geq$ 2 and GG $\geq$ 3 would have been missed, and 9/32(28%) and 5/14(36%) by not performing TBx. Omitting biopsies in patients with a lower PIRADS score on second MRI in comparison to their first MRI would prevent 49/212 (23%) of the biopsies at the cost of missing 18% (7/40) GG $\geq$ 2 and 18% (3/16) GG  $\geq$ 3. Limitation of this study is the absence of the PRECISE score.

	Outcome secondary MRI					
		No lesion	PIRADS 3	PIRADS 4	PIRADS 5	Total
Grade group after secondary MRI	0	28	9	17	3	57
	1	36	21	37	13	107
	2	2	6 + [2]	11 + [1]	5 + [5]	24 + [8]
	3	0	2	5	1	8
	4	0	1	2	3	6
	5	0	0	1	1	2
Total		66	41	74	31	212

**Table 1** – Outcome of biopsies after secondary MRI in PRIAS. Between brackets, the number of patients who were already known to have grade group 2, so no reclassification.

**Conclusions:** Based on our results, we conclude that in patients with a negative second MRI confirmatory biopsies can safely be omitted. Both SBx and TBx are indicated if the second MRI shows a lesion ( $\geq$  PIRADS 3) because the risk of being reclassified to GG $\geq$ 2 and GG $\geq$ 3 exceeds 20% and 5% for all PIRADS scores. In patients with a lower PIRADS score on secondary MRI, biopsies cannot safely be omitted.