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### Introduction

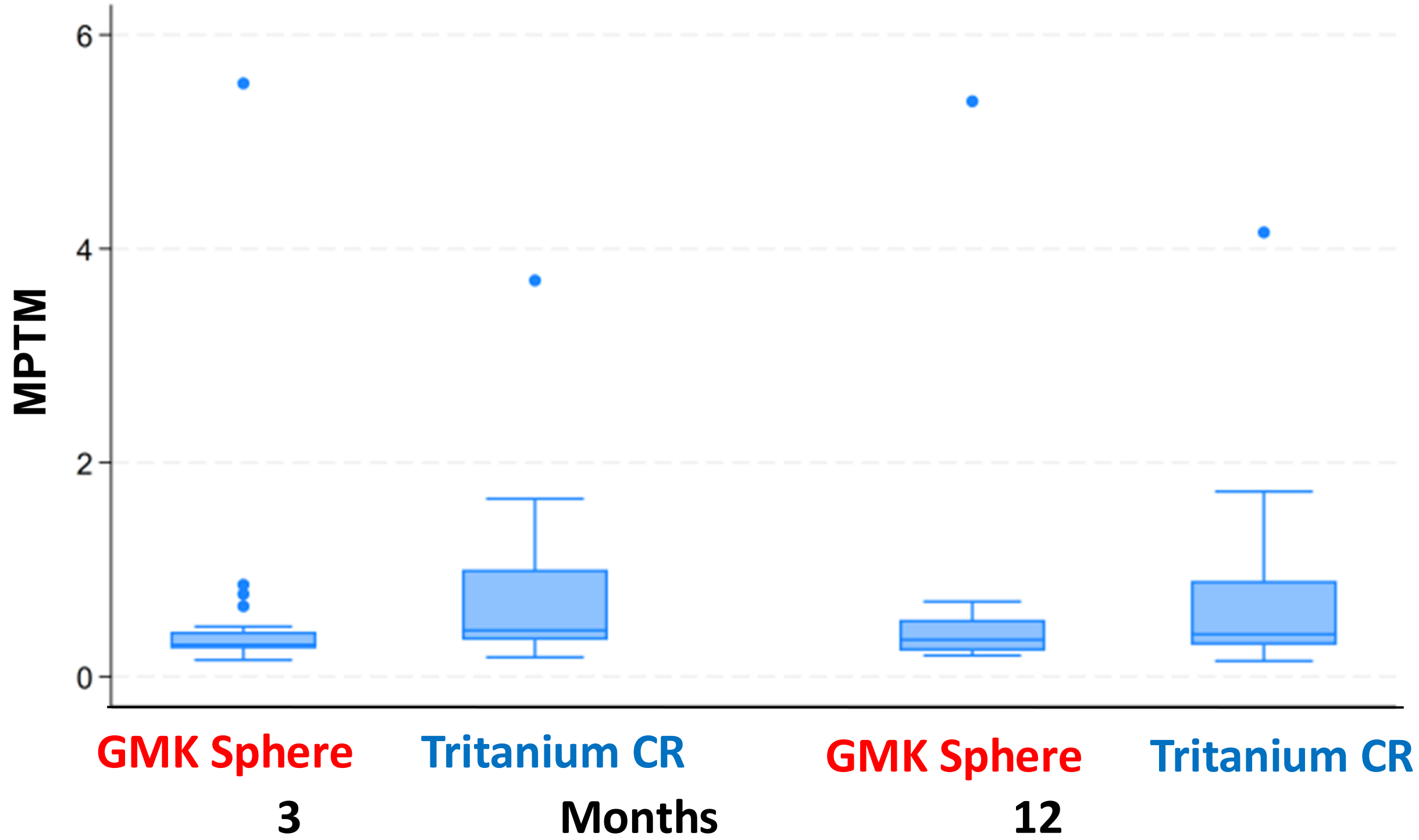
A medial pivot total knee arthroplasty GMK Sphere was introduced to the market several years ago<sup>1</sup> . A 3D printed cementless version of this prosthesis is now introduced. The aim of this study was to analyze the early migration of this new tibial implant and compare it with that of a well-documented implant, using CT-RSA <sup>2,3</sup>.

### Methods and Materials



Figure 1 **GMK Sphere 3D Metal** and **Tritanium CR** tibial implants

### Results



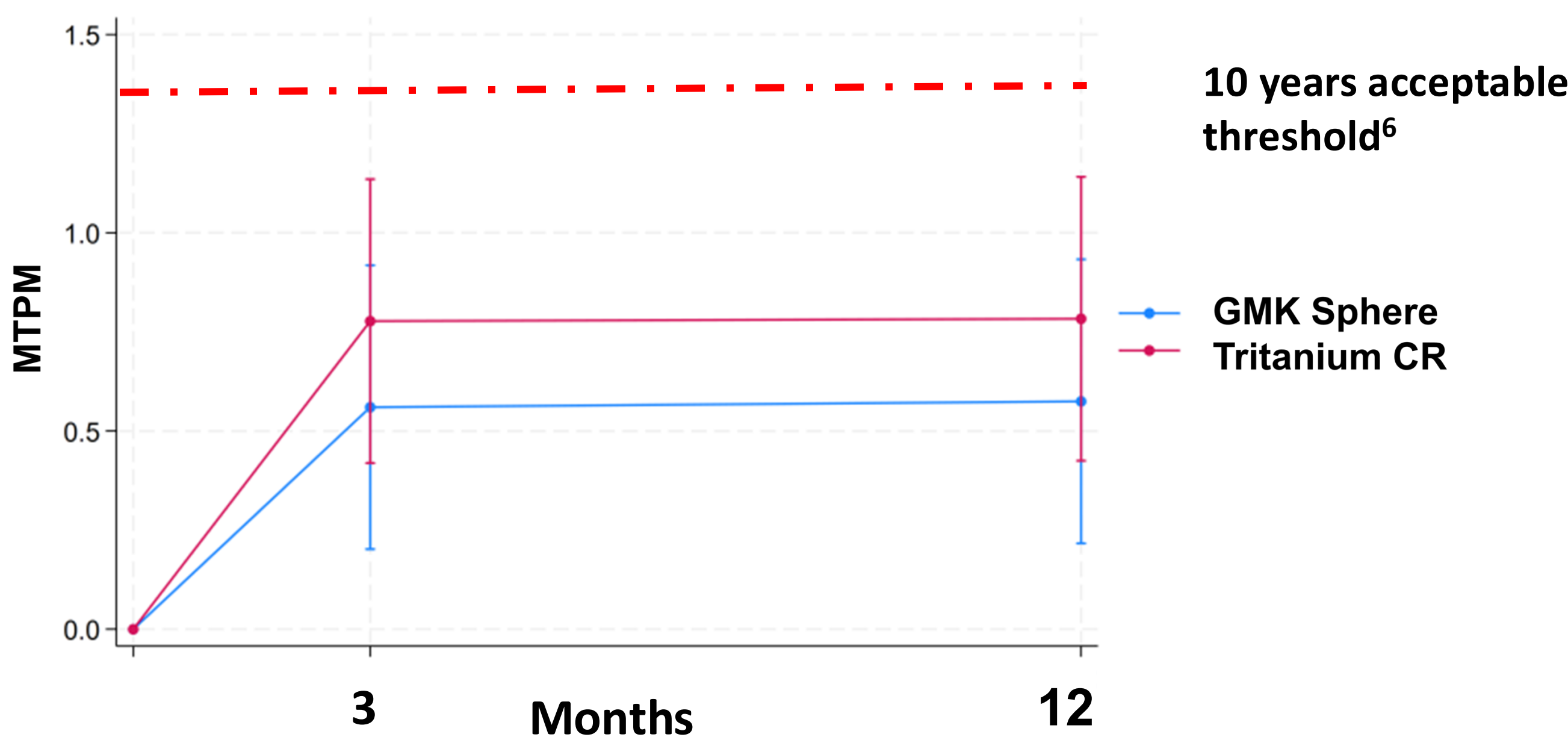
### Discussion

The main finding of the 1 year migrations results is that there was no significant difference in migration of the implants, neither with the MTPM nor segmental translations and rotations. Both implants also showed migration patterns well below thresholds set by Pijls et. al <sup>6</sup>.

### Methods and Materials

In this blinded RCT we randomized patients to receive either GMK Sphere 3D Metal (Medacta Int.) (n=25) or Tritanium CR (Stryker, Mahwah, USA) (n=25) <sup>4,5</sup>. CT-RSA was performed postoperatively, and at 3 and 12 months postoperatively. We measured MTPM and XYZ translations and rotations.

### Results



	Tritanium	GMK	Absolute	95% CI	P value
		Sphere	difference		
MTPM	0.6	0.8	0.2	-0.3-0.7	0.42
Translations					
Transversal	0.1	0.1	0.0	-0.1-0.0	0.79
Posterior	-0.1	-0.1	0.0	0.0-0.1	0.58
Proximal	-0.1	-0.3	0.2	-0.3-0.1	0.14
Rotations					
Transversal	0.4	-0.2	0.6	-1.3-0.1	0.07
Varus	0.2	0.0	0.1	-0.5-0.2	0.47
Internal	-0.2	-0.4	0.2	-0.3-0.0	0.08

### Conclusions

The results of the study show that the mean micromotions and rotations of the tibial components of GMK Sphere 3D Metal and Triathlon Tritanium did not differ significantly at 1 year follow up.



### References

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