First experiences with GPS balloon catheter in below the knee angioplasty

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Methods
We included patients after angiography from groin with defects or rest pain with stenosis or occlusion BTK (below the knee) and with no suprapopliteal lesions. Whole angioplasty was performed with CM (contrast media) administrated through GPS balloon by automatic pump (1.5 ml/s, max. volume 5 ml). We recorded radiation dose (RD), fluoroscopic time (FT) and mount of CM for diagnostic angiography, for PTA of every single vessel and for final result angiography. We used OTW GPS balloon on 0.014 inch wire – 4 mm balloon for distal popliteal artery, 3 mm balloon for tibial and peroneal arteries and 2 mm balloon for dorsal and plantar artery.

Results
We performed BTK angioplasty of 25 arteries in 11 patients. Overall we treated 221 cm of stenosis and 73 cm of occlusions. Average CM and RD for diagnostic angiography was 29.54 ml and 6.302 Gy.cm². Average CM for single vessel angioplasty was 3.35 ml. Average FT and RD for single vessel were 3.956 min, 1.660 Gy.cm². We were unsuccessful with GPS (no cross the lesion by wire) in three vessels, in two we converted to standard BTK balloon – one with good result, one with no success.

Conclusion
GPS balloon is very promising device with ability to reduce mount of CM, fluoroscopic time and radiation dose in BTK angioplasty.

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76 yo man
- DM, former smoker, nephropathy
- new periferal defects
- PTA BTK repeatedly in history

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