

“Polyurethane PICC lines were found to provide lower rates of infection, dislodgment, thrombus and rupture complications” Seckold et al (2015).

Reference:

Seckold, T.L., Walker, S. and Dwyer, T. (2015) A comparison of silicone and polyurethane PICC lines and postinsertion complication rates: a systematic review. The Journal of Vascular Access. January 23rd. .

Comparison of silicone and polyurethane PICC line complication rates <http://ctt.ec/Y6f2G+@ivteam> #ivteam

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Abstract:

**PURPOSE:** To determine postinsertion complication rate for peripherally inserted central catheters (PICCs), in particular the difference between silicone and polyurethane lines in general population groups as well as oncology and non-oncology patient groups.

**METHODS:** A systematic review of prospective and retrospective studies in the English language between January 2000 and October 2013 focusing on postinsertion complication rates for PICCs in the adult population. Joanna Briggs Institute tools were used to extract data from the final 19 articles with information collated relating to catheter type, patient type, overall complication rate, rates of infection, occlusion, dislodgment, phlebitis, thrombus and rupture.

**RESULTS:** Overall, the PICCs complication rates ranged from 8 to 50%. Although both lines saw similar overall rates upon closer observation, the strengths and weaknesses of both lines are shown. Polyurethane PICC lines were found to provide lower rates of infection, dislodgment, thrombus and rupture complications. Mixed results were found with catheter line occlusions, overall averages showing polyurethane lines slightly higher rates than silicone. Oncology patients however saw opposite results. Phlebitis rates saw the largest division among the postinsertion complication rates, with 6.7% more phlebitis in the general patient group and 14.5% in the oncology group more for those with polyurethane PICC lines compared with the silicone.

**CONCLUSIONS:** Both silicone and polyurethane PICC lines exhibit nearly identical overall average postinsertion complication rates; however, it is the type of complications



experienced that differ. Overall, oncology patients can expect to experience higher levels of postinsertion complications.

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