“However, the use of the locking fluid is associated with known risks due to “leakage” of the lock. A new hypothesis is proposed here to explain the lock fluid leakage; that the leakage is due to advective and diffusive mass transfer by blood flow around the catheter tip in situ.” McGah et al (2014).

Reference:

Article offers hypothesis why central line locking solutions leak http://ctt.ec/P60Z6+ @ivteam #ivteam

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Abstract:

Central venous catheters are often filled when not in use with an anti-coagulating fluid, usually heparinized saline, known as the locking fluid. However, the use of the locking fluid is associated with known risks due to “leakage” of the lock. A new hypothesis is proposed here to explain the lock fluid leakage; that the leakage is due to advective and diffusive mass transfer by blood flow around the catheter tip in situ. Previously, the leakage mechanism has been hypothesized, based on in vitro experiments, to be fluid motion driven by buoyancy forces between the heavier blood and the lighter locking fluid. The current hypothesis is
justified by a simple 1D mass transfer model as well as more sophisticated 3D computational hemodynamic simulations of an idealized catheter. The results predict an initial, fast (}

Other intravenous and vascular access resources that may be of interest (External links – IVTEAM has no responsibility for content).