

Abstract:

Background and aim: Transilluminator device allow healthcare professionals to visualize peripheral veins without using tourniquet. Aim of the study was to test the ability of three devices (Christie VeinViewer Flex (Christie, Lake Mary, Florida, USA), ICEN IN-G090-2 (ICEN Technology Company Limited, Guangdong, China) and AccuVein AV400 (AccuVein, New York, USA)) to present quality images thought defined criterion.

Materials and methods: Study was designed as a comparison of technical characteristics, evaluation of image quality and assessment of applicability in different conditions (different viewing angels, conditions of lightning and image visibility under interference of humidity and body lotions) in reference person on two venipuncture sites.

Results: Devices have different technical characteristics and vary in optimal distance for good quality image (18-30 cm), number of presented veins (1-4), image dimension (6.0-90.3 cm²), length (1.5-8.0 cm) and thickness (2-5 mm) of the dominant blood vessel. Devices present different image visibility under different viewing angels, conditions of lightning and interference of humidity and body lotions (from good quality to unusable images).

Conclusion: Transillumination devices differ in their technical characteristics and performance. The choice of the device should be based on the needs of the particular patient population and the intended use of the device.

Reference:

Dorotić A, Kuktić I, Vuljanić D, Šimundić AM. Verification of technical characteristics and performance of VeinViewer Flex, ICEN IN-G090-2 and AccuVein AV400 transillumination devices. Clin Chim Acta. 2021 Apr 8;519:40-47. doi: 10.1016/j.cca.2021.04.001. Epub ahead of print. PMID: 33839091.