"We tested the hypothesis that a low-power UV LED could reliably eliminate bacteria on needleless central line ports in a laboratory model of central line contamination" Hutchens et al (2015).

Reference:

Hutchens, M.P., Drennan, S.L. and Cambronne, E.D. (2015) Calibration of optimal use parameters for an ultraviolet light emitting diode in eliminating bacterial contamination on needleless connectors. Journal of Applied Microbiology. March 20th. .

Cleaning needleless connectors with an ultraviolet light emitting diode http://ctt.ec/8nduc+ @ivteam #ivteam

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Abstract:

AIMS: Needleless connectors may develop bacterial contamination and cause central-line associated bloodstream infections (CLABSI) despite rigorous application of best-practice. Ultraviolet (UV) light emitting diodes (LED) are an emerging, increasingly affordable disinfection technology. We tested the hypothesis that a low-power UV LED could reliably eliminate bacteria on needleless central line ports in a laboratory model of central line contamination.

METHODS AND RESULTS: Needleless central line connectors were inoculated with Staphylococcus aureus. A 285 nm UV LED was used in calibrated fashion to expose contaminated connectors. Ports were directly applied to agar plates and flushed with sterile saline, allowing assessment of bacterial survival on the port surface and in simulated usage flow-through fluid. UV applied to needleless central-line connectors was highly lethal at 0.5 cm distance at all tested exposure times. At distances greater than 1.5 cm both simulated flow-through and port surface cultures demonstrated significant bacterial growth following UV exposure. Logarithmic-phase S. aureus subcultures were highly susceptible to UV induction / maintenance dosing.

CONCLUSIONS: Low-power UV LED doses at fixed time and distance from needleless central-line connector ports reduced cultivable S. aureus from >106 CFU to below detectable levels in this laboratory simulation of central-line port contamination.

SIGNIFICANCE AND IMPACT: Low-power UV LEDs may represent a feasible alternative to current best-practice in connector decontamination.

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