



The NeutraClear® needleless connector proved to be as efficient as the MicroClave® connector in the prevention of catheter colonization and migration of *S. aureus* from the surface to the inside of the hub in an in vitro model” Guembe et al (2017).

Abstract:

Introduction: Neutral-valve closed-system connectors can reduce the frequency of catheter colonization. Commercially available closed system connectors need to be tested and compared with each other to assess how they protect against contamination. We aimed to compare, in vitro, the efficacy of connectors NeutraClear® and MicroClave® against contamination under conditions of daily clinical practice.

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Methods: The model consisted of a set of 200 blood culture bottles (BCBs) with a cannula inserted (100 closed with NeutraClear® and 100 closed with MicroClave®) that were assessed in two experiments while instilling 1 mL of saline: manipulation based on the standard of care and manipulation using gloves impregnated with a 0.05 McFarland *Staphylococcus aureus* solution. The BCBs were incubated in a BACTEC System at 37°C under continuous shaking for up to 7 days. When a bottle turned positive, 100 µL of the fluid was



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cultured. The positivity rate and time to positivity of the BCB in each experiment was compared.

Results: In the aseptic model in the NeutraClear® and MicroClave® groups, only 1 BCB and 2 BCBs were positive, respectively, ($p = 0.55$). In the contaminated model, all BCBs were positive in both groups at the end of the incubation time. We did not find differences for the MTP between NeutraClear® and MicroClave® (36.04 vs. 20.13 hours, $p = 0.09$).

Conclusions: The NeutraClear® needleless connector proved to be as efficient as the MicroClave® connector in the prevention of catheter colonization and migration of *S. aureus* from the surface to the inside of the hub in an in vitro model.

Reference:

Guembe, M., Pérez Granda, M.J., Cruces, R., Alcalá, L. and Bouza, E. (2017) The NeutraClear® needleless connector is equally effective against catheter colonization compared to MicroClave®. *The Journal of Vascular Access*. July 29th. .

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