

**P0380**

**Paper Poster Session**

**Vascular and vascular access infections**

**The Tego™ needleless connector for hemodialysis catheters may protect against catheter colonization**

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**Background:** In hemodialysis patients, the most commonly used connectors are open caps, as they allow high blood flows. However, current guidelines for the prevention of catheter-related infections recommend the use of closed needleless connectors because they are associated with lower rates of C-RBSI. Therefore, data on the use of these devices in hemodialysis patients with tunneled catheters are scarce. The neutral-valve, closed-system, needle-free hemodialysis connector Tego™ (ICU Medical, California, USA) is a promising closed connector that should be tested. We performed an in vitro study to compare the efficacy of Tego™ connectors against catheter colonization with that of conventional open caps in order to standardize catheter care in this group of high-risk patients.

**Material/methods:** The model consisted of 200 blood culture bottles (BCB) with an inserted cannula closed either with Tego™ (100) or with open caps (100). BCB were manipulated using 2 different methods: under aseptic conditions and with gloves contaminated with a 0.05 McFarland *Staphylococcus aureus* solution. The BCB were incubated at 37°C under continuous shaking for up to 7 days or until positive. When a BCB turned positive, 100 µL of the fluid was cultured. The positivity rate and time to positivity of the BCB in each method were compared.

**Results:** Overall, 4.0% of BCB with Tego™ and 52.0% of BCB with open caps were positive in the sterile model ( $p < 0.001$ ), whereas all BCB in the contamination model were positive. We did not find differences regarding the median time (hours) to positivity between Tego™ and the standard cap in the contamination model (19.04 vs. 17.87,  $p = 0.465$ ) (**table**).

**Conclusions:** In our model, Tego™ proved to be better than the standard cap for the prevention of contamination when the device was handled under optimal conditions. Moreover, it was as efficient as the standard catheter cap in the contamination model. Future randomized studies must be performed in a clinical setting.

**Table . Comparison of Tego™ connectors and open caps regarding time to positivity of blood culture bottles in both manipulation models**

Connector	Time to positivity of BCB
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	Sterile manipulation			<i>Staphylococcus aureus</i> manipulation		
	Mean (SD)	Median (IQR)	p	Mean (SD)	Median (IQR)	p
Tego™	164.25 (2.630)	74.25 (59.91-74.25)	0.13	24.21 (1.376)	19.04 (17.42-34.58)	0.74
Open caps	148.090 (5.345)	144.47 (93.21-144.47)		24.00 (1.554)	17.87 (15.80-34.24)	
Total	156.170 (3.086)	NA		24.11 (1.033)	18.80 (16.55-21.05)	

**BCB**, blood culture bottles ; **SD**, standard deviation ; **IQR**, interquartile range ; **NA**, not applicable.