“We measured heating of isotonic saline by three fluid warmers in six experiments” Kim et al (2014).

Reference:


Laboratory performance review of three fluid warmers http://ctt.ec/3Fpsg+ @ivteam #ivteam

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Summary:

We measured heating of isotonic saline by three fluid warmers in six experiments: saline at 5 °C or 20 °C delivered at 30, 50 or 100 ml.min⁻¹. At the three flow rates, the enFLOW®, buddy lite™ and ThermoSens® systems heated 5 °C saline to mean (SD) temperatures of: 41.1 (0.5) °C, 37.7 (0.6) °C and 39.1 (0.6) °C; to 40.3 (0.8) °C, 33.9 (1.6) °C and 39.3 (0.7) °C; and to 37.1 (0.8) °C, 24.0 (1.3) °C and 37.6 (1.0) °C, respectively, p < 0.0001 for each experiment. The mean (SD) times taken to heat 5 °C saline were: 16.6 (1.7) s, 258.4 (58.9) s and 134.2 (79.6) s; 16.9 (1.8) s, 256.2 (62.2) s and 182.5 (74.5) s; and 21.5 (1.5) s, 275.9 (49.3) s and 313.5 (18.0) s, respectively, p < 0.0003 for each experiment. The results for saline at 20 °C were similar. The enFLOW system heated saline above 36 °C faster than the ThermoSens system, whereas the buddy lite often failed to achieve 36 °C.

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