

Comparison of a central and a peripheral (cephalic vein) injection site for the measurement of cardiac output using the lithium-dilution cardiac output technique in anesthetized dogs

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The objective of this study was to determine the agreement between cardiac output measured by central (cranial vena cava) versus peripheral (cephalic vein) venous injection of lithium chloride for lithium-dilution cardiac output (LiDCO) determination in the dog. Five dogs (2 males, 3 females), anesthetized with halothane, were used. With each dog, 12 alternating central and peripheral LiDCO measurements were made, resulting in 10 paired comparisons. A total of 50 comparisons were obtained, the cardiac output measurements ranging from 1.11 to 2.76 L/min. The LiDCO measurement from the cephalic vein was similar to that obtained from the recommended central venous site: the difference between the central and cephalic vein determinations for all measurements was 0.098 ± 0.336 L/min (mean \pm 2 standard deviations). Linear regression analysis demonstrated a slope of 1.050 (95% confidence interval 0.904 to 1.196) and a y intercept of 0.005 ($r = 0.902$). Therefore, although the central venous site is recommended by the manufacturer, the cephalic vein can be used instead in the dog, eliminating the need for central venous catheterization and thus reducing time and expense.