

The purpose of this study was to determine in clinical practice whether tourniquet use during the drawing of a lactate results in significantly altered levels compared to the result of a level drawn without a tourniquet” Balakrishnan et al (2016).

Abstract:

OBJECTIVE: Lactate levels are increasingly used to guide resuscitation efforts. Some surgical literature suggests that tourniquet use during phlebotomy falsely elevates results, although studies in healthy volunteers have not demonstrated this. The purpose of this study was to determine in clinical practice whether tourniquet use during the drawing of a lactate results in significantly altered levels compared to the result of a level drawn without a tourniquet.

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METHODS: A prospective cohort study was carried out on emergency department patients whose clinical presentation led a physician to order a lactate level. Written informed consent was obtained from patients or their proxies. Study lactates were obtained using a tourniquet during the draw sequence of other laboratory studies. Lactate levels for clinical use were drawn per hospital protocol with no tourniquet. The time of lactate measurements and patient demographic information were recorded. Lactate levels for each patient were compared with the Wilcoxon Rank-Sum Test.

RESULTS: 40 patients were consented and enrolled. The median clinical lactate level was 1.9 (interquartile range 1.5-2.6), and the median study lactate level was 1.9 (interquartile range 1.4-2.7). There was no difference between paired lactate values ($p=0.95$).

CONCLUSIONS: Tourniquet use appears to have no impact on measured lactate levels. Our findings suggest that current practices at many institutions regarding lactate collection are likely too stringent and should be changed.

Reference:

Balakrishnan, V., Wilson, J., Taggart, B., Cipolla, J. and Jeanmonod, R. (2016) Impact of Phlebotomy Tourniquet Use on Blood Lactate Levels in Acutely Ill Patients. CJEM. 18(5), p.358-62.

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