

IO samples can be used with a bedside point of care analyzer to rapidly obtain certain laboratory information during resuscitations when IV access is difficult” Tallman et al (2016).

Abstract:

Background: In the early phases of resuscitation in a critically ill patient, especially those in cardiac arrest, intravenous (IV) access can be difficult to obtain. Intraosseous (IO) access is often used in these critical situations to allow medication administration. When no IV access is available, it is difficult to obtain blood for point of care analysis, yet this information can be crucial in directing the resuscitation. We hypothesized that IO samples may be used with a point of care device to obtain useful information when seconds really do matter.

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Methods: Patients presenting to the emergency department requiring resuscitation and IO placement were prospectively enrolled in a convenience sample. 17 patients were enrolled. IO and IV samples obtained within five minutes of one another were analyzed using separate EPOC® point of care analyzers. Analytes were compared using Bland Altman Plots and intraclass correlation coefficients.

Results: In this analysis of convenience sampled critically ill patients, the EPOC® point of care analyzer provided results from IO samples. IO and IV samples were most comparable for pH, bicarbonate, sodium and base excess, and potentially for lactic acid; single outliers for bicarbonate, sodium and base excess were observed. Intraclass correlation coefficients were excellent for sodium and reasonable for pH, pO₂, bicarbonate, and glucose. Correlations for other variables measured by the EPOC® analyzer were not as robust.

Conclusion: IO samples can be used with a bedside point of care analyzer to rapidly obtain certain laboratory information during resuscitations when IV access is difficult.

Reference:

Tallman, C.I., Darracq, M. and Young, Y. (2016) Analysis of Intraosseous Blood Samples Using an EPOC Point of Care Analyzer during Resuscitation. The American Journal of Emergency Medicine. December 12th. .

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