



To evaluate the cost-effectiveness, from the funding body’s point of view, of real-time ultrasound-guided central venous catheter insertion compared to the traditional method, which is based on the external anatomical landmark technique” Noritomi et al (2016).

Abstract:

OBJECTIVE: To evaluate the cost-effectiveness, from the funding body’s point of view, of real-time ultrasound-guided central venous catheter insertion compared to the traditional method, which is based on the external anatomical landmark technique.

METHODS: A theoretical simulation based on international literature data was applied to the Brazilian context, i.e., the Unified Health System (Sistema Único de Saúde - SUS). A decision tree was constructed that showed the two central venous catheter insertion techniques: real-time ultrasonography versus external anatomical landmarks. The probabilities of failure and complications were extracted from a search on the PubMed and Embase databases, and values associated with the procedure and with complications were taken from market research and the Department of Information Technology of the Unified Health System (DATASUS). Each central venous catheter insertion alternative had a cost that could be calculated by following each of the possible paths on the decision tree. The incremental cost-effectiveness ratio was calculated by dividing the mean incremental cost of real-time ultrasound compared to the external anatomical landmark technique by the mean incremental benefit, in terms of avoided complications.

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RESULTS: When considering the incorporation of real-time ultrasound and the concomitant lower cost due to the reduced number of complications, the decision tree revealed a final mean cost for the external anatomical landmark technique of 262.27 Brazilian reais (R\$) and for real-time ultrasound of R\$187.94. The final incremental cost of the real-time ultrasound-guided technique was -R\$74.33 per central venous catheter. The incremental cost-effectiveness ratio was -R\$2,494.34 due to the pneumothorax avoided.

CONCLUSION: Real-time ultrasound-guided central venous catheter insertion was associated with decreased failure and complication rates and hypothetically reduced costs from the view of the funding body, which in this case was the SUS.

Full Text

Reference:

Noritomi, D.T., Zigaib, R., Ranzani, O.T. and Teich, V. (2016) Evaluation of cost-effectiveness from the funding body's point of view of ultrasound-guided central venous catheter insertion compared with the conventional technique. *Revista Brasileira de Terapia Intensiva*. 28(1), p.62-69. .

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