



This study compared the cost-effectiveness of ultrasound-guided umbilical venous catheterisation with conventional catheterisation in a neonatal intensive care unit of a Public University Hospital” Guzmán-de la Garza et al (2019).

Abstract:

INTRODUCTION: Although the use of ultrasound for the insertion of central catheters has proven to be cost-effective in adults, it is not known if this is the case in the neonatal population. This study compared the cost-effectiveness of ultrasound-guided umbilical venous catheterisation with conventional catheterisation in a neonatal intensive care unit of a Public University Hospital.

PATIENTS AND METHODS: A retrospective observational study was conducted on newborns that required an umbilical venous catheter before completing their first 24hours of extra-uterine life. Two retrospective cohorts were formed, including one with ultrasound-guided catheterisation and the other with conventional catheterisation. The effectiveness was measured using 2 variables: placement of ideal position and insertion without complications. The cost of human and material resources (consumable and non-consumable), the cost-effectiveness ratio, and the incremental cost-effectiveness ratio were estimated, as well as carrying out a sensitivity analysis.

RESULTS: Catheter obstruction was more frequent in guided catheterisation than in

conventional catheterisation (7.7% vs. 0%, $p=.04$) and catheter dysfunction was higher in the latter (79% vs. 3.8%, $p<.0001$). The cost-effectiveness ratio of the guided catheterisation was €153.9, and €484.6 for the conventional one. The incremental cost-effectiveness ratio was €45.5. The sensitivity analysis showed a €2.6 increase in the cost-effectiveness ratio of the guided catheterisation and €47 in the conventional one. **CONCLUSIONS:** The use of ultrasound to guide umbilical catheterisation is more efficient than conventional catheterisation since, despite using more economic resources, it offers greater effectiveness.

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Reference:

Guzmán-de la Garza, F.J., Laredo-Flores, A.D., Cárdenas-Del Castillo, B., Cordero-Franco, H.F., Salinas-Martínez, A.M., Fernández-Garza, N.E. and Ochoa-Correa, E. (2019) Ultrasound-guided umbilical venous catheterisation: A cost-effectiveness analysis. *Anales de Pediatría*. May 22nd. doi: 10.1016/j.anpedi.2019.04.005. . .

