



Master in Evidence-Based Practice e Metodologia della Ricerca Clinico-assistenziale



**Centro Studi EBN**

**Azienda Ospedaliero - Universitaria di Bologna**

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**Direttore del corso: Paolo Chiari**

In collaboration:

The Joanna Briggs Institute (Australia): Tiffany Conroy

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## **Protocol Sistematic Review**

### **AUTHOR INFORMATION:**

Primary Reviewer: **Gianesini Gloria**

Secondary Reviewer: **Pizzuto Manuela**

## **Review title**

**Heparin vs. saline for patency of peripheral venous catheters in pediatric patients**  
**A systematic review**

## **Review Question**

More specifically, the objectives are to identify : In the pediatric patient the maintain of the patency of peripheral venous catheter is better to use the heparin solution or saline solution.

## **Review Instrument**

Mastari

## Background

In hospitalized patients pediatric's care, peripheral venous catheterization is a common practice for the administration of intravenous therapy. Often this therapy is not continuous throughout the day, so it is necessary acquire knowledge for management peripheral venous catheter when not used.

It's necessary to preserve the patency of peripheral venous catheter when not in use.

In clinical practice there are several ways to achieve this objective, using indiscriminately washing with saline solution or with heparin solution, often the personal assessment guide the choice of two options: (Example: administration's frequency of therapy or the composition of intravenous therapy introduced).

The aim of this review is to standardized practice in pediatric wards. While lots has been written about adults ( Best Practice volume 12 Issue 5 2008), nothing conclusive has been written for children .

We limited the research to studies involving 6-12 years old patients because patients younger than 6 years old have lower percentage of PVC use and peripheral venous catheters in young child may be left in place until IV therapy is completed unless a complication—such as extravasation, phlebitis, or infection—occurs (the 2002 Hospital Infection Control Practice Advisory Commiter Centers for Disease Control and Prevention Guideline for Prevention of Intravascular device- related infection, Pediatric Vol. 110, No 5 Nov. '02 pp1009-1013), concepts reiterated in a previos descriptive study (J Infus Nurs. 2002 May-Jun;25(3):159- A descriptive study of peripheral intravenous catheters in patients admitted to a pediatric unit in one Australian hospital - Foster L, Wallis M, Paterson B, James H.)

We don't use any limits in the publication year because only few studies have been published on this issue.

Our question is not specified the number of heparin units to be use for mantein the patency of peripheral venous catheters (very uncertain matter still) then the focus of this review is on the choice of the best typology of solution (heparine vs. saline) of the pediatric patient

## **Inclusion Criteria**

### **Types of Participants**

The quantitative component of this review will consider studies that include pediatric (6-12 years) patient with peripheral venous catheter (PVC)

### **Types of intervention(s)**

The quantitative component of the review will consider studies that evaluate use of heparin solution vs. saline solution for patency PVC

### **Types of outcome**

Quantitative (use for module2):

This review will consider studies that include the following outcome measures:  
percentage blocked PVC

### **Types of studies**

The quantitative component of the review will consider any randomised controlled trials; in the absence of RCTs other research designs, such as non-randomised controlled trials and before and after studies, will be considered for inclusion in a narrative summary to enable the identification of current best evidence regarding the use of heparin solution vs. saline solution for patency PVC in pediatric patient.

## **Search strategy**

The search strategy aims to find published studies. A three-step search strategy will be utilised in each component of this review. An initial limited search of MEDLINE and CINAHL will be undertaken followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe article. A second search using all identified keywords and index terms will then be undertaken across all included databases. Thirdly, the reference list of all identified reports and articles will be searched for additional studies.

The databases to be searched include:  
MEDLINE, CINAHL, EMBASE, Cochrane  
limits: language (english,italian, french)

## **Initial keywords to be used will be:**

Child, peripheral venous catheter , saline, heparin

## **Assessment of Methodologic Quality**

Quantitative papers selected for retrieval will be assessed by two independent reviewers for methodological validity prior to inclusion in the review using standardised critical appraisal instruments from the Joanna Briggs Institute Meta Analysis of Statistics Assessment and Review Instrument (JBI-MAStARI) (Appendix V).\*

\*Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer.

## **Data Collection**

Quantitative data will be extracted from papers included in the review using the standardised data extraction tool from JBI-MAStARI (Appendix VI).\*

\*The data extracted will include specific details about the interventions, populations, study methods and outcomes of significance to the review question and specific objectives.

## **Data Syntesis**

(JBI-MAStARI). All results will be subject to double data entry. Odds ratio (for categorical data) and weighted mean differences (for continuous data) and their 95% confidence intervals will be calculated for analysis. Heterogeneity will be assessed using the standard Chi-square. Where statistical pooling is not possible the findings will be presented in narrative form.

## **Conflict of interest**

None