

30th World Congress on

ADVANCED NURSING PRACTICE

September 04-06, 2017 | Edinburgh, Scotland

Picc line for children Is there a need for a personal adjustment?

Sara Anna Lin Bitan

Schneider children Medical Centre, Israel

Medical treatment in children is a great challenge for health providers; it requires high professional standards with sensitivity and creativity towards the ailing child and his family. One of the difficulty that caregivers faces is keep an open vein for the purpose of giving long inter vein treatment and taking blood samples. The fear and pain that these actions can invoke may have a bad influence on the child's experiences in his present and future. This fact requires an easy and an available approach to central vein. A Peripherally Inserted Central Catheter (Picc) gives an efficient and comfortable answer for children who are in need for a long period of vein access. In the last decade there was a significant increase in the usage of a Picc line Catheter but there are reports about frequent mechanical and bacterial complications. Therefore there isn't a consensus for the type of central catheter that should be used. Further studies which will examine the risk factors that can predict complications when using Picc line catheter in children are needed.

Purpose of the study: To identify the common complications when using a Picc line catheter. To reveal the character with strong correlations to these complications.

Method: Data about children who were inserted a Picc line catheter was gathered prospectively during a year time and included variables connected to the child, to the catheter and the reason for the removal of the catheter.

Results: 271 Picc line catheters were inserted to 219 children. The indications for inserting the catheter were 35% giving antibiotics for a long period of time, 29% deferent IV drugs treatment, 23% oncology treatment, 11%for TPN and 2% for blood samples. About third of the catheters were removed because of different complications: 7.7% infection, 27.5% mechanical. We found that children under 20 kg have more risk to remove the Picc line catheter for any type of complication ($p < 0.00$). A high level of leucocytes at the time of the insertion of the catheter influences the removal of the catheter as a result of complications ($p < 0.048$). A normal thrombocytes level was found to protect against complications ($p < 0.023$). Oncology patients were found to be in 20% higher risk to develop catheter connected complications compared to the rest of the study subjects ($p < 0.048$).

Conclusions: When inserting a Picc line catheter to children these variables need to be consider as predictors for a complication: Level of leucocytes, thrombocytes and weight of the child. In addition there is a need to measure BMI level when choosing the type of central catheter. It was found that the process of insertion and maintenance of the catheter in our medical center is reliable and safe as it was reported in the professional literature. Research findings can help in building intervention model and writing an adjusted guideline for children with the purpose of reducing number of complications, improving the quality and safety of the suggested treatment.

sarabitan6@walla.com

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