Do we always choose the best CVAD? An evaluation of satisfaction with central venous access device placement in paediatric onco-haematology patients.

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WoCoVA 9th World Congress on Vascular Access | 15-17 APRIL 2026 VALENCIA SPAIN

BANSKÁ BYSTRICA DETSKÁ NEMOCNICA Fakultná nemocnica s poliklinikou

Introduction :

The clinical management of paediatric haemato-oncological diseases requires high-quality venous access. Selecting the optimal central venous access device (CVAD) depends on treatment duration, age, and personal preferences. Collaboration among healthcare professionals, children, and parents helps ensure that a device meets both clinical requirements and patients´ everyday needs, illustrating the pros and cons of each device[1].

Method:

We conducted an anonymous, voluntary 8-item questionnaire-based survey from January to December 2025 at the Clinic of Paediatric Oncology and Haematology in our children´s hospital. Participants included children with a CVAD indwelling for over three months and their parents. The survey evaluated satisfaction levels, the incidence of complications, and device-related issues. Age and diagnosis data were excluded to ensure anonymity.

Results:

40 questionnaires were analysed. 31 (77.5%) were completed by parents, and 9 (22.5%) by parents in collaboration with their child. The distribution of CVADs included 15 chest ports (37.5%), 14 TncCICCs (35%), 6 PICCs (15%), 3 PICC-ports (7.5%), one TncFICC, and one Hickman catheter (2.5% each). In total, 12,450 catheter days were recorded (average 309 days per device). Twenty-seven respondents (67.5%) expressed overall satisfaction with their current catheter. Notably, 80% of respondents stated in their answers that they would choose the same type of CVAD again. I want to point out that 62.5% of patients reported no complications with their current catheters, 15 cases (37.5%) involved issues such as persistent withdrawal occlusion (n=4), medical adhesive-related skin injuries (n=4), thrombosis (n=3), dislodgement (n=2), and infection (n=2). Additionally, 40% of patients had a history of previous CVAD placement, with complications occurring in 7 of those instances.

Patient/Parent satisfaction questionnaire for long-term venous access devices

The questionnaire is anonymous and serves to improve the quality of healthcare provided. You may complete it yourself, or in cooperation with your child. Thank you for completing it .

I will be filling out the questionnaire:

- for my child □
- together with my child □
- my child dictated the answers to me, or filled out the questionnaire themselves □

1. What type of venous access does your child have inserted and approximately for how long? (select and check, state approximately in months or years)

- PICC □ ..... months ..... years
- Tunneled CICC □ ..... months ..... years
- Chest Port □ ..... months ..... years
- Port inserted into the arm (PICC-port) □ ..... months ..... years
- Hickman □ ..... months ..... years
- I do not know what type of access it is – describe where it is inserted and for how long: .....

2. How satisfied are you with your child's current venous access? (1- not at all – 10 completely)

1 2 3 4 5 6 7 8 9 10

3. Did your child have any other venous access inserted previously, and how many? (check and write the number)

- Midline □
- CVC/non tunneled CICC □
- PICC □
- Tunneled CICC □
- Chest Port □
- Port inserted into the arm (PICC-port) □
- Hickman □
- I do not know what type of access it is – describe: .....

4. What do you consider the main advantage of your child's current venous access?

Please turn the page

5. What is the main disadvantage of your child's current venous access?

6. If you could decide again, would you choose the same type of venous access that your child currently has inserted?

- Yes □
- No □ I would prefer (check): PICC □ Tunneled CICC □ Chest Port □ Port inserted into the arm (PICC-port) □ Hickman □

7. Did your child have any complications in relation to the currently inserted access?

- He/she had no complications □
- Bleeding □
- Infection □
- Thrombosis □
- Problems with blood draws □
- Skin problems □
- Malfunction, pulled out during handling □
- Other – please describe: .....

8. Did your child have problems with the previous venous access?

- He/she did not have another access inserted □
- Yes, he/she previously had inserted: PICC □ Tunneled CICC □ Chest Port □ Port inserted into the arm (PICC-port) □ Hickman □ CVC/non tunneled CICC □

and he/she had this complication:

- Bleeding □
- Infection □
- Thrombosis □
- Problems with blood draws □
- Skin problems □
- Malfunction, pulled out during handling □
- Other – please describe: .....
- He/she had an access inserted, but without complications □

Question no.1 - Type of CVAD	TncCICC	Chest port	PICC	PICC-port	TncFICC	Hickman catheter
Number of CVAD/dwell time	14 / 137m	15 / 191m	6 / 40m	3 / 41m	1 / 3m	1 / 3m
Question no.2 -Level of satisfaction	**Completely satisfied - 10-9**	**Mostly satisfied - 8-7**	**Somewhat satisfied – 6-5**	**Mostly dissatisfied – 4-3**	**Completely dissatisfied – 2-1**	
Number/percentage	22 / 55 %	9 / 22,5 %	4 / 10 %	2 / 5 %	3 / 7,5 %	
Question no.3 – Previuos CVAD	**TncCICC**	**Chest port**	**PICC**	**PICC-port**	**TncFICC**	**Hickman catheter**
Number	6	4	2	2	0	2
Question no.4 - Advantages	**Easy blood sampling**	**Bathing/showering**	**No visible external tubing**			
Number/percentage	28 / 70%	7 /17,5%	2 / 5%			
Question no.5 -Disadvantages	**Problems with bathing/showering**	***Pain associated with needle access***	**CVAD dressing change**	**Aestetic – insertion scar**	**Visible external tubing**	**None**
Number/percentage	14 / 35%	8 / 20%	5 / 12,5%	2 / 5%	7 / 17,5%	7 /17,5%
Question no.6 – Repeated decision	**Yes, I would choose the same CVAD**	**No, I´d rather choose:**	**Chest port**	**TncCICC**	**PICC-port**	
Number/percentage	32 / 80%	8 / 20%	4 / 10%	2/5%	1 / 2,5%	
Question no.7 – Current catheter - complications	**Blood sampling / PWO**	**MARSI**	**Dislodgement**	**Thrombosis**	**Infection/CRBSI**	**None**
Number/percentage	4 /10%	4 / 10%	2 / 5%	3 / 7,5%	2 / 5%	25 / 62,5%
Question no.8 – Previous CVAD - complications	**No previous CVAD**	**Previous CVAD with no complications**	**Previous CVAD with complications :**	**Thrombosis**	**Infection/CRBSI**	**Dislodgement**
Number/percentage	24 / 60%	8 / 20%	8 / 20%	1 / 2,5%	5 / 12,5%	2 / 5%

Discussion & Conclusion:

Despite involving parents and children in the decision-making process, informing them about the advantages and disadvantages of each venous access type, overall satisfaction with the current CVAD reached only 67.5%. These findings likely correlate with the 37 .5% complication rate and daily challenges such as needle insertion pain, hygiene issues and dressing changes. Enhancing communication and improving device maintenance are essential. Such improvements could significantly reduce the stress associated with a potentially "incorrect" device choice and foster patient-healthcare professional cooperation, ultimately influencing the success of treatment outcomes. A CVAD should provide a reliable mechanism for treatment administration, not an additional stressor for the child or family [2].

References:
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