

Capturing patient perspectives in the evaluation of medical devices: The case of central venous access devices in chemotherapy

Ryan, C. & Wu, O.

HEHTA, Institute of Wellbeing, University of Glasgow

1. Background

Three different central venous access devices (CVADs) are routinely used in the intravenous administration of anti-cancer treatment: peripherally inserted central catheter (PICC), skin-tunnelled central catheter (Hickman), and implantable chest-wall Port (Port). These devices avoid the need for undesirable repeated peripheral cannulation¹ and allow for home treatment.

There is a lack of evidence as to which device offers the best outcomes in terms of safety, clinical efficacy, cost-effectiveness², and quality of life³. A multi-site randomised controlled trial aiming to provide this evidence is currently underway in the UK, entitled 'Cancer and Venous Access' (CAVA). As part of this trial, a qualitative study was undertaken to assess these devices from the perspective of patients.

2. Objectives

Primary objective: To explore patients' experiences of CVAD use in anti-cancer treatment, with a view to assessing impact on quality of life.

Secondary objective: To contribute to the development of a quality of life measure specific to these devices.

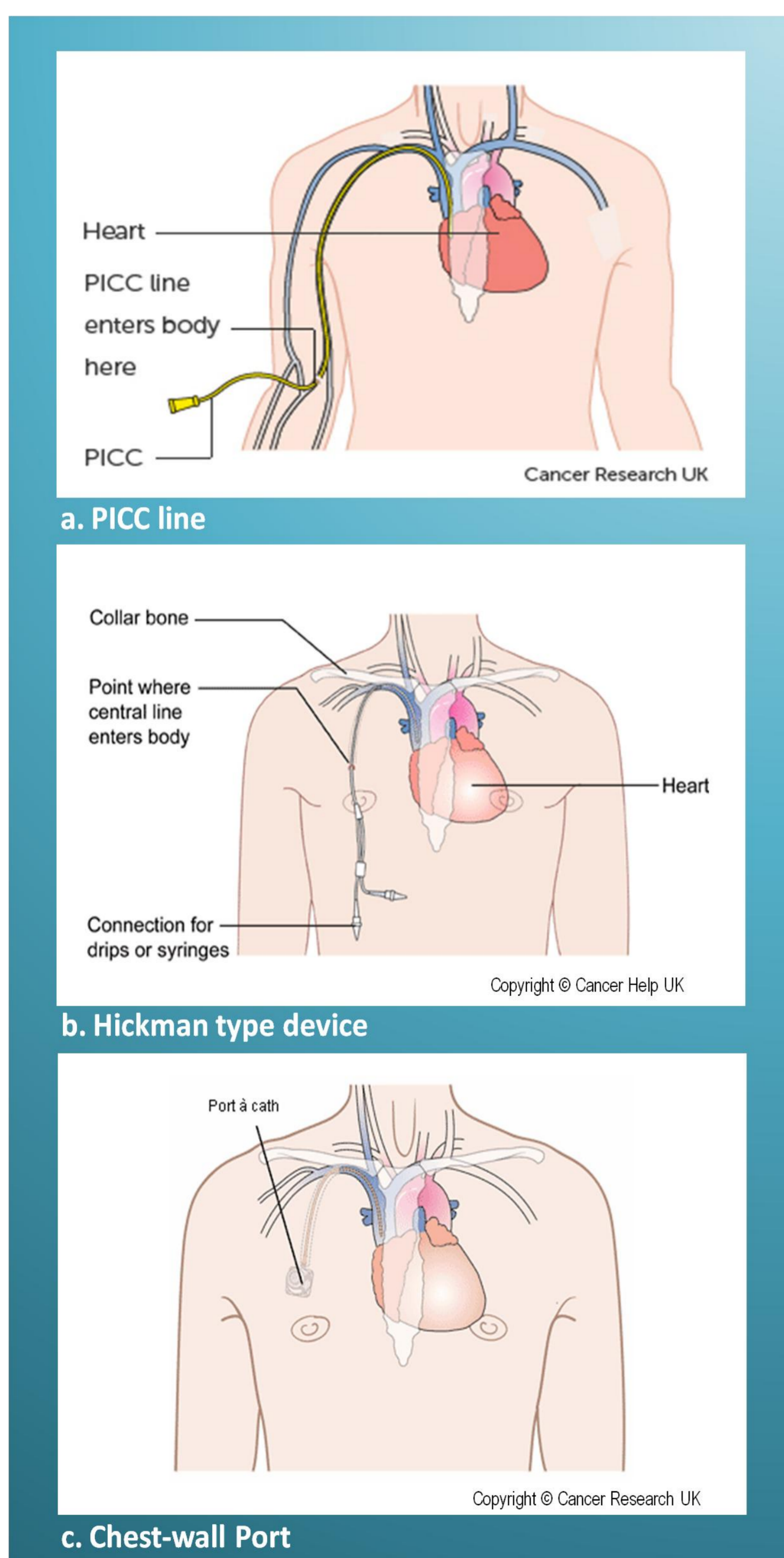


Figure 1: CVADs used in chemotherapy

3. Methods

Semi-structured focus group discussions were conducted with patients participating in CAVA at the trial's six major recruitment sites in England and Scotland. A range of experiences with different devices were sampled. Focus groups were audio-recorded and transcribed. Analysis is an iterative process and currently ongoing. Transcripts are analysed using a data-driven approach focusing on patients' lived experience. Results presented are provisional.

4. Results

Seven focus groups were conducted. Analysis has found that the effect of CVADs on patients' quality of life is influenced by three key factors: (i) patient adaptability, (ii) staff capabilities, and (iii) device type.

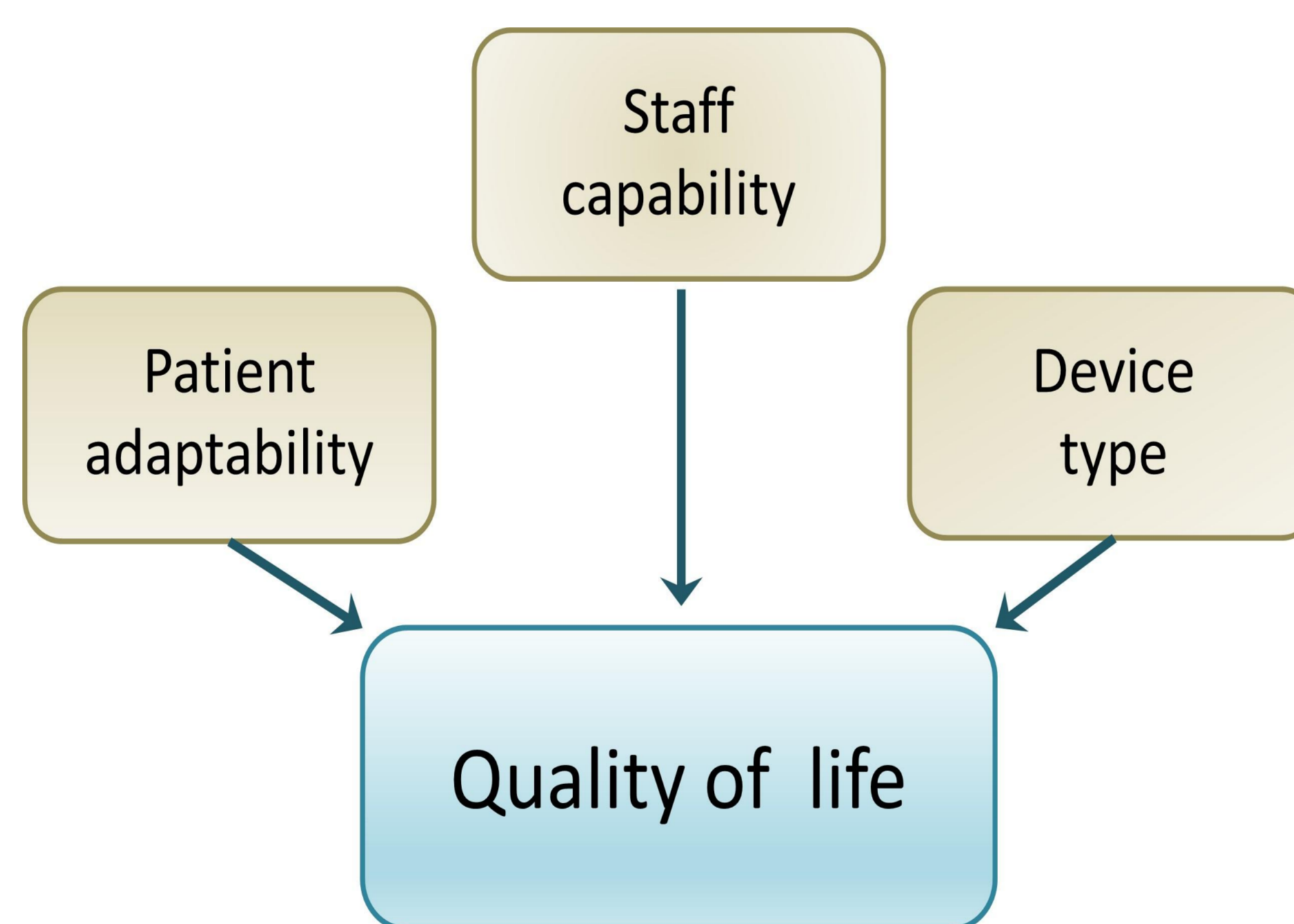


Figure 2: Factors influencing effects of CVAD on quality of life

Effects of device on quality of life

(I) Patient adaptability: Overall, the three CVADs had limited impact on patients' day-to-day lives. However, they did present challenges to patients. Their limited impact was dependent upon meaningful adjustments and adaptations by patients, both behavioural and psychological.

"And it's just... adapt. I don't have to stop doing things, I just do things a bit different."

- Male, Port device

Often, patients had not been adequately prepared for the challenges they met. They identified a need for concrete, tailored information about practical and locally available resources.

(II) Staff capabilities: Patients' concerns about their devices were tied to perceptions regarding staff confidence and competence. Patients with Ports described playing a role in educating staff unfamiliar with the device.

"But you're having to reassure the nurses. When they're pulling it you say 'If it hurts, I'll let you know'."

- Female, Port device

(III) Device type: Patients had positive perspectives on all three devices. However, while patients with PICC and Hickman devices expressed personal satisfaction, those with Port devices discussed additional social and psychological benefits and called Ports to be more widely available in this context.

"I feel quite strongly about it – the small difference between Hickman costs and Port costs in the overall benefits to people who are suffering enough any way."

- Female, Hickman device

Measurement of quality of life

Patients provided feedback on an original questionnaire developed for the purposes of CAVA which was felt to capture experiences more adequately than a standardised measure (i.e., EQ-5D).

5. Conclusion

This research identifies several challenges facing patients who need CVADs in the context of anti-cancer treatment and examines the ways in which these challenges relate to quality of life. This analysis offers novel insights regarding some potential benefits of Port devices in this context.

In addition, this research suggests that conventional approaches using EQ-5D alone to capture the impact of medical devices on patient quality of life may not be sufficient; the incorporation of technology-specific measures should be considered.

References

- ¹Robinson-Reilly M et al: Venous access: The patient experience. Support Care Cancer 2016, 24: 1181-1187.
- ²Kulkarni S et al: Centrally inserted external catheters and totally implantable ports for the delivery of chemotherapy, Cardiovasc Intervent Radiol 2014, 37: 990-1008.
- ³Corriere M et al: Exploring patient involvement in decision making for vascular procedures. J Vasc Surg 2015, 62: 1032-1039.