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Nurses' Opinion and Practice on the Use of Ultrasound Technology for Cannulation in a Single Haemodialysis Unit

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Introduction

Cannulation of arteriovenous fistulae and grafts (AVF/G) for haemodialysis (HD) is traditionally performed by blind method. Ultrasound-guide cannulation can decrease cannulation-related adverse events and was introduced to the HD unit 3 years ago. However, the utilization of ultrasound varies among the nursing team. A survey study was therefore conducted to explore nurses' opinion and practice on use of ultrasound to identify area for improvement.

Objectives

The objective of the study is to explore nurses' opinion and practice on use of ultrasound in the HD unit, in order to collect information for further improvement.

Methodology

All nurses working in the HD unit were surveyed using a questionnaire to reveal their opinion and practice on the use of ultrasound on AVF/G cannulation.

Result

All nurses (20) completed the survey questionnaire. Results showed that 15 nurses (75%) have received on-the-job training and use ultrasound for AVF/G care. Self-rating of competency level on use of ultrasound from the 15 nurses showed: 4 (20%) as high; 9 (45%) as average; 2 (10%) as low. Only the 13 nurses (65%) with self-rate competency level as high and average use ultrasound for cannulation. The frequency of ultrasound use by each nurse ranged from 0 to 10 times with the mean of 3.5 times per week. Apart from cannulation, ultrasound is also used for assessing AVF/G and checking needle position. Nurses use ultrasound-guided cannulation for complicated AVF/G including: poor vascularity; post-surgical intervention; newly created and deteriorating AVF/G. 92% of the nurses who use ultrasound for cannulation believe that ultrasound can increase the successful rate in cannulation. The barriers for the use of ultrasound are: inadequate training; inadequate experience; time consuming for setting up and operating ultrasound machine with time constraint due to the need of putting other patients on HD; and the belief that more practice in

traditional blind method can enhance one's cannulation skill, without over relying on ultrasound technology. Conclusions: Haemodialysis nurses believe that ultrasound is useful and can help in successful cannulation for HD. However, various barriers have been identified for using ultrasound including inadequate training and experience; time constrain and individual's personal belief. These barriers should be overcome to facilitate utilization of ultrasound to benefit HD patients.