

TITLE: CENTRAL VENOUS ACCESS DEVICE DRESSING AND SECUREMENT: OLD HABITS VS EVIDENCE VS SHINY NEW TOYS

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Dependable central venous access devices (CVADs) are an essential component in the care of patients. Dressing and securement products are used to prevent CVAD failure and complication, but there are a large variety of products available for clinicians to access, with variable effectiveness. Many decisions made by clinicians surrounding CVAD dressing and securement are based upon availability and tradition, rather than evidence.

The objective was to describe the effectiveness of CVAD securement and dressing products to prevent CVAD failure and complications. A Cochrane systematic review and a narrative review of CVAD securement and dressing products were undertaken and evidence from both studies synthesised.

Twenty-two randomized controlled trials were included within the Cochrane systematic review and 20 clinical and laboratory studies included in the narrative review. The major mechanisms CVAD dressing and securement products prevent failure and complications are through providing a barrier to microbial contamination and motion reduction. CVAD securement and dressing products provide these functions using coating, adhesion, antimicrobial properties, absorbency and moisture vapour transmission. Chlorhexidine-impregnated dressings are significantly more effective than plain dressings to reduce the incidence of catheter-related bloodstream infections ( $p=0.01$ ) and catheter tip colonisation ( $p<0.001$ ). Many novel solutions for CVAD securement are available to reduce the need for suturing, including tissue adhesive, sutureless securement devices and integrated securement and dressing products, but greater evidence surrounding effectiveness is necessary.

CVAD securement and dressing products provide important, multi-faceted functions to prevent CVAD failure and complication. The complexity of patients requiring CVAD means that universal recommendations and broad generalisation of studies' results from single populations or devices are ill-advised.