

# FEMORAL, JUGULAR OR SUBCLAVIAN SITE PLACEMENT OF CENTRAL VENOUS CATHETERS: IS THERE AN IMPACT ON THE RISK OF CLABSIs?



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## AIM

Central venous catheters are not without risk during both placement and while in situ. Compared with femoral site access, internal jugular or subclavian access was associated with a lower risk of catheter-associated bloodstream infections (CLABSIs) in earlier studies, but recent studies found no significant differences in the rate of CLABSIs between these three sites. The objective of this study was to estimate the rate of CLABSIs with respect to the site of subclavian, internal jugular, and femoral insertion in a hospital population of all units.

## RESULTS

We retrospectively studied the rate of CLABSIs and colonization of catheters inserted at the subclavian, internal jugular, and femoral sites for a 2-year period. The optimal insertion site for each individual patient was selected by experienced intensive care physicians. All of the operators were proficient in inserting catheters at all three sites, and catheter insertion was performed under maximal sterile barrier precautions.

A total of 1187 central venous catheters and 9774 catheter days in 905 patients were studied. The overall incidence of CLABSIs was 5.32/1,000 catheter days, and the overall catheter colonization rate was 12.48/1,000 catheter days.

The rate of CLABSIs was; subclavian: 4.85 /1,000 catheter days, internal jugular: 4.83 /1,000, and femoral: 8.04/1,000 (p<0.01).

The rate of catheter colonization was; subclavian: 15.43 colonization/1,000 catheter days, internal jugular: 8.15/1,000), and femoral: 25.46/1,000.

| CLABSI      | CVC       |            |         |         |
|-------------|-----------|------------|---------|---------|
|             | Total CVC | Subclavian | Jugular | Femoral |
| Cath. Days: | 9774      | 2269       | 6013    | 1492    |
| # of cath:  | 1187      | 208        | 801     | 178     |
| CLABSI #    | 52        | 11         | 29      | 12      |
| CLABSI Rate | 5,32      | 4,85       | 4,82    | 8,04    |
| CLABSI %    | 4,38      | 5,29       | 3,62    | 6,74    |

| Colonization      | CVC       |            |         |         |
|-------------------|-----------|------------|---------|---------|
|                   | Total CVC | Subclavian | Jugular | Femoral |
| Cath. Days:       | 9774      | 2269       | 6013    | 1492    |
| # of cath:        | 1187      | 208        | 801     | 178     |
| Colonization #    | 122       | 35         | 49      | 38      |
| Colonization Rate | 12,48     | 15,43      | 8,15    | 25,47   |
| Colonization %    | 10,28     | 16,83      | 6,12    | 21,35   |

Table 1.

## CONCLUSIONS

A statistically significant higher rate in both CLABSIs and catheter colonization was observed at the femoral site of central lines. No differences in rates were observed among the two other sites in CLABSIs, while in tip colonization subclavian site exhibited greater rates compared to jugular.

Chart 1.

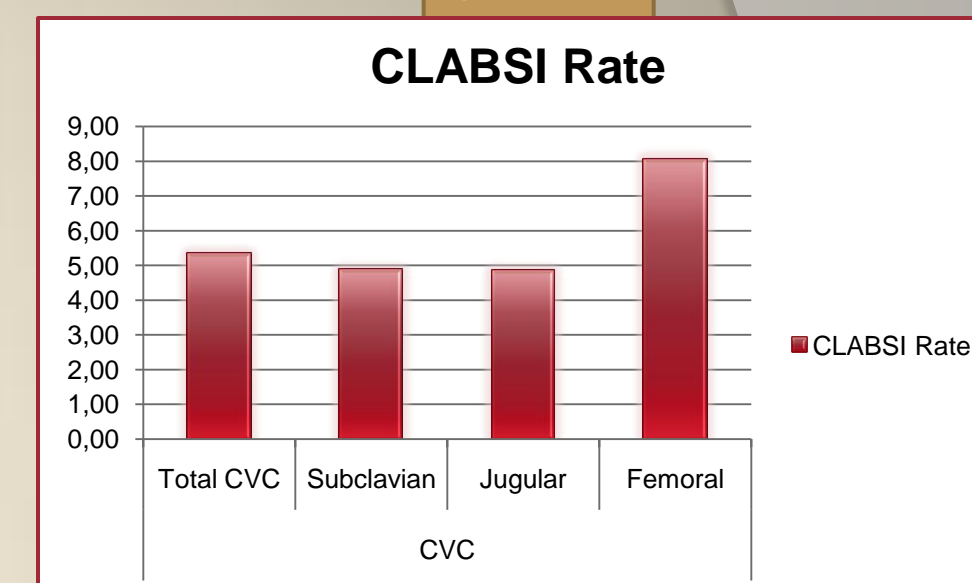


Chart 2.

