

Clinical Characteristics Of Catheter-Related Bloodstream Infections (CRBSIs) In Victoriano Luna Medical Center from January 2020 to December 2020: A Retrospective Cross-Sectional Study

Abegail Narose O. Atanacio, MD¹, Rafael P. Montepio, MD, FPSN¹, and Alena Marie Hosana, MD¹
¹Department of Internal Medicine, Victoriano Luna Medical Center, Armed Forces Of The Philippines Health Service Command
 Corresponding author's e-mail: ANATANACIO@YAHOO.COM

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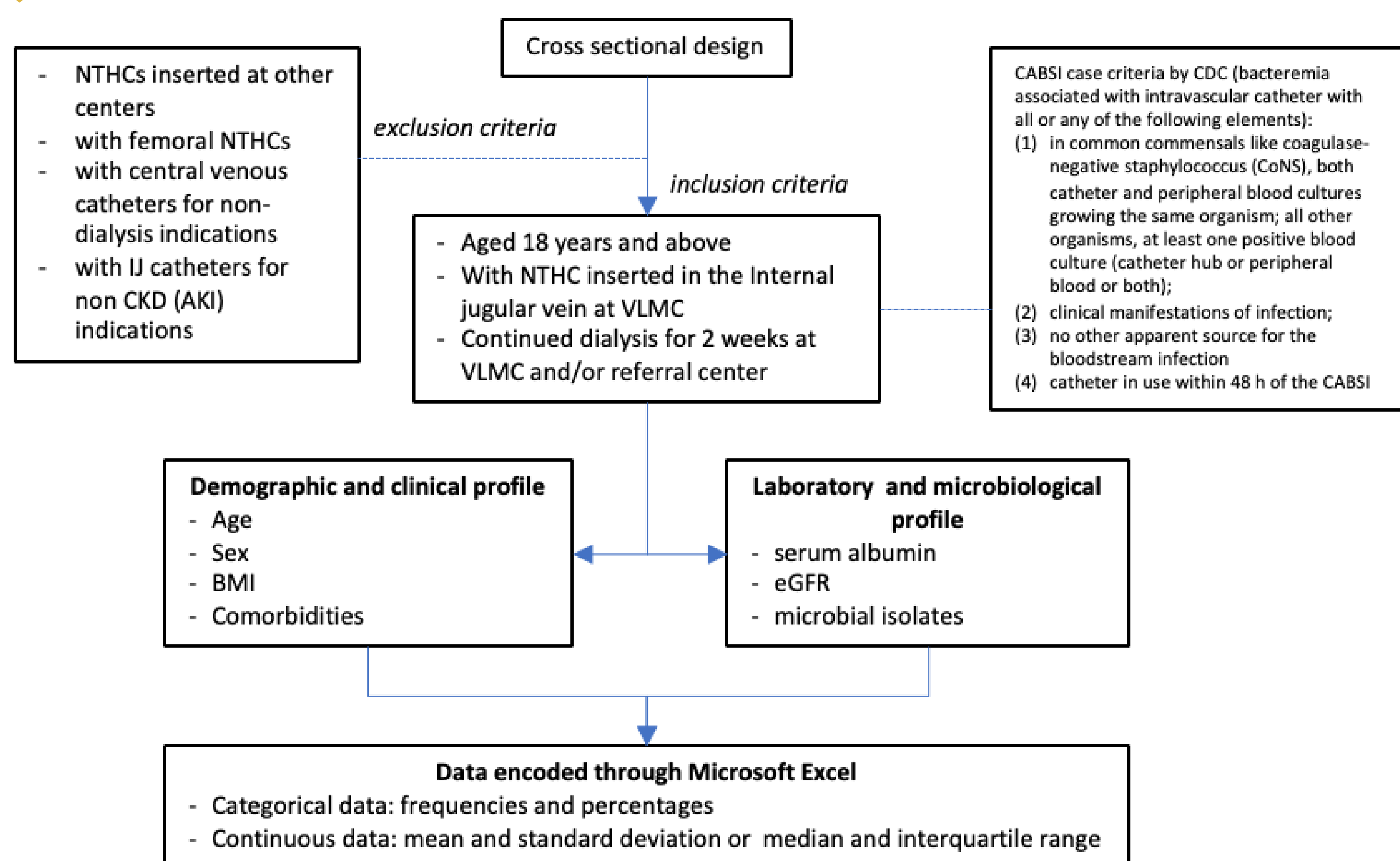
INTRODUCTION

Infections are common complications among patients on chronic hemodialysis. Hemodialysis patients with a catheter have a two- to three-fold increased risk of hospitalization for infection and death compared with patients with an arteriovenous fistula or graft.¹ CRBSIs alone have a reported incidence of 1.1 to 5.5 episodes per 1000 catheter days and are associated with increased morbidity, hospitalization, and death.² This current study investigated the demographic profile, microbiological spectrum, clinical characteristics, and laboratory parameters of patients with NHTCs with CRBSI at Victoriano Luna Medical Center.

OBJECTIVE

This current study investigated the demographic profile, microbiological spectrum, clinical characteristics, and laboratory parameters of patients with NHTCs with CRBSI at Victoriano Luna Medical Center.

METHODS



RESULTS

Overall, there were two mortalities (6.25%) among the CRBSI positive subjects.

Table 1: Demographic and clinical characteristics of the study population (n=32).

	n (%)
I. Age (years)	
Early adulthood (22 - 34)	7 (21.88)
Early middle age (35 - 44)	7 (21.88)
Late middle age (45 - 64)	7 (21.88)
Late adulthood (65 or higher)	11 (34.38)
II. Sex	
Male	18 (56.25)
Female	14 (43.75)
III. BMI (kg/m²)	
Underweight (< 18.5 kg/m ²)	2 (6.25)
Normal (18.5 - 24.9kg/m ²)	17 (53.13)
Overweight (25-29.9 kg/m ²)	12 (37.5)
Obesity (30 or higher)	1 (3.13)
IV. Comorbidities	
Hypertension	28 (87.5)
Cardiovascular disease	7 (21.88)
Diabetes Mellitus	6 (18.75)
V. Serum albumin (g/L) mean, SD	
< 35	5 (15.63)
≥35	27 (84.38)
VI. eGFR (ml/min/1.73 m²) at HD initiation med, IQR	
<15	27 (84.38)
15 - 29	4 (12.5)
30 - 44	1 (3.13)
VII. Microbial isolates	
<i>E. coli</i>	5 (15.63)
<i>S. aureus</i>	2 (6.25)
<i>P. aeruginosa</i>	2 (6.25)
<i>S. marcescens</i>	1 (3.13)
Coagulase (-) <i>Staphylococcus</i>	1 (3.13)
VIII. HD frequency	
Twice	16 (50)
Thrice	16 (50)

DISCUSSION

Based on the results of this study, hypertension is the most prevalent comorbidity followed by cardiovascular disease then diabetes mellitus among hemodialysis patients with NHTCs consistent with the study of Pepin et al. This is important to note as presence of comorbidities is one of the risk factors for CRBSI.^{5,6}

The most common organisms causing CABSIs was *E. coli* which is consistent with the study of Bahl et al. although varies with the clinical setting. The dominance of *E. coli* reflects community-onset bloodstream infections.

In this present study, we noted two mortalities (6.25%) among the CRBSI positive subjects. It is well known that the contamination rates were reduced in the equipment involved, with good training and periodic retraining; with special attention to hand washing, as different papers have made it clear.⁸ Nevertheless, despite these measures, bacteremia occurs and accounts for one of the main causes of mortality in hemodialysis patients.

CONCLUSION

Demographic and clinical outcomes of the patients were described in this study but a 5- to 10-year follow up studies may be done to determine the significant outcomes of CRBSI. Larger sample size is also needed in order to establish association between different host characteristics and the risk of developing CRBSI among patients with NHTC.

Moreover, it is recommended that additional analysis be done to estimate the attributable morbidity, mortality, and economic impact of CRBSIs, among VLMC CKD patients for the association of risk factors and outcome catheter-related bloodstream infections with internal jugular non-tunneled hemodialysis catheters.

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