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A Comparative Analysis of Tunneled Hemodialysis Catheter Exchange via Over-the-Guide-Wire and De Novo Approaches

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Objectives : The 2019 KDOQI guidelines introduce the use of the Over-the-guide-wire method as one of the approaches for the treatment of catheter dysfunction or catheter infection-related infections, particularly in patients with limited central venous access sites. This study aims to compare catheter patency between the Over-the-guide-wire method and the De novo method involving removal and re-insertion for tunneled hemodialysis (HD) catheter exchange.
Methods : A retrospective study was conducted on 191 patients from Seoul St. Mary's Hospital who underwent tunneled HD catheter exchange between 2011 and 2023, examining the 1-year survival following catheter exchange and subsequent removal of the tunneled HD catheter. We compared intervention-free survival, infection-free survival, and overall access survival until abandonment, defined as the duration during which the catheter was utilized for its intended purpose, excluding cases where removal was necessary due to catheter dysfunction or infection.
Results : Over-the-guide-wire catheter exchange group (n=123) was comparable to De novo exchange group (n=68) in terms of intervention, infection free survival and overall access survival until abandonment. While the Over-the-guide-wire group showed a tendency for a higher intervention frequency in the year following the exchange, ultimately, there was no significant difference in survival rates between the two groups. The intervention incidence rates were 14.63% (18/123) and 16.18% (11/68) in Over-the guide wire and De novo group, respectively. Additionally, the infection rates did not differ, indicating that Over-the-guide-wire group is not inferior to De novo group for infectious complication, describing on the Kaplan-Meier curve with a p-value above 0.05 (Figure 1). Overall access survival until abandonment showed as mean days, with over-the-guide-wire at 103 ± 104.83 days and De novo at 130.41 ± 128.30 days.
Conclusions : Over-the-guide-wire tunneled HD catheter exchange shows a comparable one-year intervention and infection-free survival rate to De novo exchange, demonstrating sufficient longevity for patients requiring exit site preservation.

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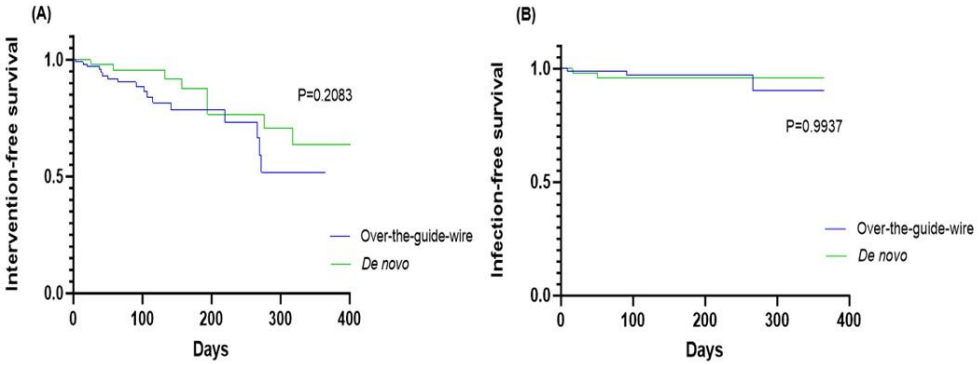
Figure 1



(A) Kaplan–Meier curves of Intervention-free survival in patients. (B) Kaplan–Meier curves of Infection-free survival in patients.