KSN 2017 Abstract

KSN-17-O098

The Exchange Technique Using Over the Guidewire from Tunneled to Tunneled Hemodialysis Catheter Can Be Performed without Increasing Infection and Compromising Catheter Long Term Patency

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Objectives : Exchange over the guidewire technique does not require time for hemostasis after removal and the temporary insertion of femoral HD catheter when the replacement of a previous tunneled catheter to a new one is needed in the cases catheter related bacteremia or exit site infection rather than tunnel infection. It can also avoid additional new venipuncture that may be associated with the development of central vein stenosis later. However, some concerns of the increased risk of infection and bleeding after procedure cause to follow the de novo placement of the new tunneled catheter rather than exchanging over the guidewire. Therefore, we investigated its safety in our center.

Methods : From March in 2013 to February in 2017, 57 cases where the exchange from tunneled to tunneled catheter and 400 cases with de novo catheter placement were respectively assigned to exchange and de novo placement groups and these 2 groups were compared.

Results : Compared with the de novo placement group, the exchange group over the guidewire had a higher hemoglobin level (10.7 ± 2.1 g/dl vs. 9.7 ± 1.5 g/dl; $p < 0.001$), more females (67.3% vs. 47.0%; $p = 0.007$), more ESRD rather than AKI as a cause of catheter insertion (94.2% vs. 70.7%; $p = 0.003$). Both immediate complication rate including suturing at exit site for bleeding control (15.2% vs. 7.1%; $p = 0.02$) and late one including infection and catheter dysfunction (35.1% vs. 20.5%; $p = 0.02$) were higher in the exchange group. However, the catheter survival rates between two groups were comparable ($p = 0.42$) and multivariate Cox regression analysis for catheter survival showed the development of late complication was the only risk factor (odds ratio [OR] 1.412, 95% confidence interval [CI]: 1.015–1.913; $p = 0.04$) rather than the exchange procedure was not a risk factor (OR 0.850, 95% CI: 0.553–1.397; $p = 0.473$).

Conclusions : The exchange over the guidewire from a previous tunneled catheter to a new one does not affect catheter survival. Therefore, this

technique should be positively considered and performed when the new tunneled catheter placement is required.

Keywords : Catheter, hemodialysis, exchange, over the guidewire