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### Vascular Access in Hemodialysis: Peculiarities in a Low-Income Setting, Pattern, Prevalence and Relationship with Intradialysis Events and Dialysis Dose

*Accès Vasculaire en Hémodialyse : Particularités dans un Environnement à Faible Revenu, Schéma, Prévalence et Relation avec les Événements Intradialytiques et la Dose de Dialyse*

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#### ABSTRACT

**OBJECTIVES:** Dialysis vascular access has remained a major determinant of intra and inter-dialytic events and the dialysis dose, and this impacts the quality of life, morbidity and mortality of dialysis patients. Assessing the different access types would help minimize peridialytic events and improve outcome.

**METHODS:** This was a retrospective, age and sex-matched, comparative study that assessed dialysis sessions with tunneled dialysis catheters (TDCs) with arteriovenous fistula (AVF).

**RESULTS:** Two hundred and four participants with 1062 sessions were involved. The male participants had 66.7% of all sessions, 60.6% of sessions with TDCs and 87.3% of sessions with AVF,  $P=0.001$ . The elderly constituted 23.5% of all participants but 37.7% of sessions with AVF,  $P=0.04$ . The percentage of the health-insured was more in sessions with AVF compared to the study population,  $P<0.001$ . Diabetics were more likely to use the TDCs,  $P=0.06$ . Participants using AVF were more likely to receive full dialysis and erythropoietin treatment,  $P<0.001$ . Intradialytic hypotension and dialysis termination were commoner with AVF than TDCs,  $P=0.03$  and  $P=0.04$  respectively. The dialysis dose was higher with AVF than TDCs,  $P=0.02$ . Predictors of AVF as dialysis access were male gender, advancing age, health insurance and full treatment compliance.

**CONCLUSION:** There is predominance of venous catheters in our dialysis population. The AVF gave better BP control, fluid and solute clearance, and dialysis dose, and was commoner with males, the health insured and older participants. Intradialytic hypotension was commoner with AVF as IDHT was commoner with TDCs. **WAJM 2023; 40(4): 421–427.**

**Keywords:** Central venous catheters, Arteriovenous fistula, Tunneled internal jugular venous catheters, Intradialytic hypotension, Intradialytic hypertension. Dialysis dose.

#### RÉSUMÉ

**OBJECTIFS:** L'accès vasculaire à la dialyse reste un déterminant majeur des événements intra et inter-dialytiques et de la dose de dialyse, ce qui a un impact sur la qualité de vie, la morbidité et la mortalité des patients dialysés. L'évaluation des différents types d'accès permettrait de minimiser les événements péri-dialytiques et d'améliorer les résultats.

**MÉTHODES:** Il s'agit d'une étude comparative rétrospective, appariée selon l'âge et le sexe, qui a évalué les séances de dialyse avec des cathéters de dialyse tunnellisés (CDT) et des fistules artérioveineuses (FAV).

**RÉSULTATS:** Deux cent quatre participants ont participé à 1 062 séances. Les hommes représentaient 66,7 % de toutes les séances, 60,6 % des séances avec CDT et 87,3 % des séances avec FAV,  $P=0,001$ . Les personnes âgées représentaient 23,5 % de l'ensemble des participants, mais 37,7 % des séances avec FVA,  $P=0,04$ . Le pourcentage d'assurés sociaux était plus élevé dans les sessions avec AVF que dans la population étudiée,  $P<0.001$ . Les diabétiques étaient plus susceptibles d'utiliser les CDT,  $P=0,06$ . Les participants utilisant la FVA étaient plus susceptibles de recevoir une dialyse complète et un traitement à l'érythropoïétine,  $P<0,001$ . L'hypotension intradialytique et l'arrêt de la dialyse étaient plus fréquents avec l'AVF qu'avec les CDT,  $P=0,03$  et  $P=0,04$ . La dose de dialyse était plus élevée en cas de FVA qu'en cas de CDT,  $P=0,02$ . Les facteurs prédictifs de l'utilisation de la FVA comme accès à la dialyse étaient le sexe masculin, l'âge avancé, l'assurance maladie et l'observance totale du traitement.

**CONCLUSION:** Il y a une prédominance des cathéters veineux dans notre population de dialysés. Le FVA permet un meilleur contrôle de la PA, de la clairance des fluides et des solutés et de la dose de dialyse, et il est plus fréquent chez les hommes, les assurés sociaux et les participants plus âgés. L'hypotension intradialytique était plus fréquente avec le FVA que l'IDHT était plus fréquente avec les CDT. **WAJM 2023; 40(4): 421–427.**

**Mots-clés:** Cathéters veineux centraux, fistule artérioveineuse, veine jugulaire interne tunnellisée.

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