






Hemodialysis Vascular access maintenance in the Covid-19 pandemic: Positioning paper from the Interventional Nephrology Committee of the Brazilian Society of Nephrology

Manutenção de acessos vasculares para hemodiálise na pandemia da Covid-19: posicionamento do Comitê de Nefrologia Intervencionista da Sociedade Brasileira de Nefrologia

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ABSTRACT

Vascular accesses for hemodialysis are considered the patient's lifeline and their maintenance is essential for treatment continuity. Following the example of institutions in other countries affected by the Covid-19 pandemic, the Brazilian Society of Nephrology developed these guidelines for healthcare services, elaborating on the importance of carrying out procedures for the preparation and preservation of vascular accesses. Creating definitive accesses for hemodialysis, grafts and arteriovenous fistulas are non-elective procedures, as well as the transition from the use of non-tunneled catheters to tunneled catheters, which cause less morbidity. In the case of patients with suspected or confirmed coronavirus infection, one may postpone the procedures for the quarantine period, to avoid spreading the disease.

Keywords: Dialysis; Arteriovenous fistula; Fistula; Nephrology; Interventional Radiology; Angioplasty; Balloon Angioplasty; Catheters; Endovascular Procedures; Coronavirus infections.

RESUMO

Os acessos vasculares para hemodiálise são considerados a linha da vida do paciente, e sua manutenção é essencial para o seguimento do tratamento. A exemplo de instituições de outros países atingidos pela pandemia da Covid-19, a Sociedade Brasileira de Nefrologia elaborou estas orientações para os serviços de saúde, esclarecendo a importância da realização dos procedimentos de confecção e preservação de acessos vasculares. Consideramos como não eletivos os procedimentos de confecção de acessos definitivos para hemodiálise, próteses e fístulas arteriovenosas, bem como a transição do uso de cateteres não tunelizados para cateteres tunelizados, os quais acarretam menor morbidade. Nos casos de pacientes com infecção suspeita ou confirmada por coronavírus, é aceitável o adiamento dos procedimentos pelo período de quarentena, para evitar disseminação da doença.

Descritores: Diálise; Fístula Arteriovenosa; Fístula; Nefrologia; Radiologia Intervencionista; Angioplastia; Angioplastia com Balão; Cateteres; Procedimentos Endovasculares; Infecções por Coronavirus.

Due to the uncertainty about the duration of the Covid-19, pandemic and the importance of vascular access in maintaining hemodialysis (HD), the Brazilian Society of Nephrology (SBN) prepared this technical note with instructions on how to perform these procedures.

With the overload of health systems and the risk of contamination in the hospital setting, **preference should be given**

to performing procedures on an outpatient facility. Whenever possible, **suspected or confirmed cases of Covid-19 should have their procedures postponed for the quarantine period**, to prevent the virus from spreading.

Patients with short-term catheters represent the most critical cases from the vascular access point of view;¹ therefore, they must be a priority when exchanging

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for a tunneled catheter or confection of a fistula, as these accesses need less exchange procedures for patency maintenance.

NEW HD ACCESSES

Procedures that guarantee vascular access for HD should NOT be considered elective procedures; therefore, they should not be postponed. Delaying the onset of RRT due to lack of vascular access carries a risk of worsening the patient's clinical condition. This definition includes:

- Exchanges of short-term catheters for tunneled catheters should NOT be considered elective, due to the morbidity associated with the prolonged use of short-term catheters.^{1,2}
- Catheter insertions in patients starting HD.
- Creating fistulas in HD patients:
 - » Creation of arteriovenous fistulas is NOT an elective procedure. Patients who are candidates for arteriovenous fistula creation and who would benefit from early catheter removal should be sent to surgery, preferably in an outpatient facility.
 - » As for arteriovenous fistulas creation, patients must be assessed individually. For example, in elderly patients, already using tunneled catheters and without complications, fistula creation may be delayed due to the mortality of this population with Covid-19.
 - » In the post-operative period, we suggest reducing the number of consultations. The assessment can be done by the nephrologist at the HD facility, usually at 7 and 30 days, with physical examination or Doppler ultrasound if available. If a consultation with a vascular surgeon is needed, we suggest using electronic consultation if possible, to reduce patient exposure.

HD ACCESS DYSFUNCTION

In cases of patients already on HD and at risk of access loss due to stenosis or cases with thrombosis, treatment avoids the need for catheter implantation and the need for more procedures,^{1,3-5} with greater patient exposure and healthcare system overload. This definition includes and should NOT be considered elective procedures:

- Exchange of catheters with dysfunction:
 - » In cases of catheter dysfunction, the administration of thrombolytics, if available at the clinic, is the preferred method of treatment, avoiding surgical procedures for exchanges and patient exposure.^{1,6}
- Endovascular intervention in arteriovenous fistulas or grafts with clinical signs of dysfunction (for example, low flow, impossibility of punctures, cloth aspiration, etc.), to avoid loss of access and consequent catheter implantation. These procedures should be performed on an outpatient basis if possible.⁷
- Procedures for arteriovenous fistulas or grafts salvage (thrombolysis or thrombectomies).

OTHER EMERGENCIES THAT ARE NOT CONSIDERED ELECTIVE

- Infections associated with vascular access requiring a surgical approach are also NOT considered elective. This definition includes:
 - » Withdrawal or exchange of tunneled catheters due to catheter-related bacteremia.
 - » Deactivation of arteriovenous fistulas with infection without response to the use of antibiotics.
 - » Removal of infected arteriovenous grafts.
- Bleeding related to vascular accesses requiring surgical approach are NOT considered elective procedures.

Elective procedures are considered and, therefore, must be postponed:

- Outpatient consultations to monitor vascular access.
- Preoperative mapping for fistula creation.

These guidelines are issued on an urgent basis and in the face of an uncertain evolution of the magnitude of the epidemic in Brazil and in dialysis units; therefore, they may be updated in the coming weeks. The conducts must be reassessed weekly in each service.

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