Editorial

Safety on haemodialysis: Team work paradigm ☆

Seguridad en hemodiálisis: paradigma del trabajo en equipo

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Safety in healthcare is the absence or the reduction to a minimum acceptable risk of unnecessary harm during the provision of healthcare (source: AMSP/WHO: International Classification for Patient Safety).

Haemodialysis (HD) entails a series of procedures and techniques, some of which are complex, involving cutting-edge technology (water treatment, monitors, etc.), the administration of medicinal products and pharmacovigilance. All this occurs in fragile elderly patients with many comorbidities, who make use of healthcare systems in an intense and fragmented fashion, meaning they are at an increased risk of suffering from significant effects.[1,2] The likelihood of errors is therefore higher,[3] so it is necessary to establish prevention strategies for healthcare-related adverse events. This should be done through a prioritisation system, in accordance with their frequency, severity of the effects and how detectable they are.[4] Only close observation of the procedures can guarantee high quality healthcare with better clinical results, fewer complications, the elimination of inadequate procedures and greater patient satisfaction.

The most commonly reported adverse events in kidney diseases occur in hospitalised patients. These include medication errors of up to 40.7%, of which 30.2% were considered avoidable.[5] Overall, inadequate monitoring (28.3%), excessive dosing (21.7%), selection of an inadequate drug (15.0%), failure to prescribe the required drug (15.0%) and drug interactions (11.7%) are the most common errors causing avoidable adverse events.[6]

Few studies describe the type and frequency of adverse events and the errors made in HD units.[7–9] The majority are based on notification by healthcare personnel, thus requiring a higher degree of involvement in the culture of safety which is not always present.

To identify the risk areas in HD and understand the prevailing attitudes and concerns, questionnaires have been used which were designed specifically for patients and healthcare professionals. The results of these surveys conclude that: dialysis centres share significant safety risks; patients are more concerned about safety practices than personnel had thought they would; personnel believe units are safer than what the available data actually show; and a specific safety team must be in place to focus on the different risk areas and establish objectives to improve safety.[10]

Several studies summarise the most common HD safety problems into 5 groups[11–13]: (1) patient failure; (2) medication errors (including deviation from prescribed dialysis, allergic reactions and omission of medication); (3) access-related events (coagulation, infiltrates, limited blood flow, difficult cannulation); (4) technical errors (incorrect dialyser or dialysis fluid and equipment-related sepsis); and (5) blood loss or prolonged bleeding.

Strategies to prevent errors and adverse events

Safety culture

The most common causes of safety protocol violation in HD units are unintentional human errors and inadequate communication amongst healthcare personnel. It is therefore crucial to educate healthcare personnel on the culture of safety, so that they understand why these initiatives are necessary and how they can apply them.[14] It is not only important for healthcare professionals to have skills and knowledge based on scientific evidence, but they must also be able to communicate appropriately and know how to act and react in unexpected situations,[15] which is a key factor in healthcare safety.

The organisations that have developed a culture of safety generally agree that this has been a key element in achieving their objectives.[16] In fact, the lack of a positive culture towards patient safety favours the onset of adverse events, drug administration errors, patient complaints and more fistula thrombosis incidents.[17] Some experiences have shown that hypotension, venous needle disconnection and HD patient failure are associated with an unfavourable environment at work. They also showed that the aspects with the biggest influence on the suitability of this environment were the doctor-nurse relationship, the nurses' ability to provide healthcare and the quality of nursing care.[18]

The development of a culture of safety is a structural requirement for creating the conditions that allow personnel to learn from errors and to ensure they are not repeated. However, the results obtained do not provide sufficient evidence of the impact of the procedures for creating a culture of safety. The investigations into the culture of safety have been primarily aimed at evaluating personnel and patient satisfaction and the climate of safety (the personnel's attitudes and perceptions in this regard), with less focus being placed on evaluating its association with different clinical results.[19,20] In this sense, several instruments have been developed to measure the degree to which this culture has been implemented. These questionnaires are designed to gain an understanding of the organisations' specific situation and to identify actions for improvement. One of these questionnaires is created by the Agency for Health Care Research and Quality (www.ahqr.gov) and includes several indicators of patient safety, one of which may be related to HD (central venous catheter-related blood infection). This agency also established a series of 22 safety practices: ten of these are highly recommended, including the real-time use of ultrasound for the placement of central venous catheters.

Coordination and communication amongst different working teams

The collaboration of Hospital Pharmacy and the laboratory's measurement and incorporation of glomerular filtration rate have been some of the strategies implemented to reduce errors in hospitalised patients.[21,22] Other experiences have included the implementation of alert systems within the hospital, which recommend adjusting the drug dose depending on the level of renal function during hospitalisation. Furthermore, a consensus guideline for the use of medicinal products in kidney failure has recently been published. The work generating this guideline was funded by the College of Pharmacists of Barcelona (Colegio de Farmacéuticos de Barcelona, 2010–2011 edition) and the Supervised Traineeship Teaching Unit of Universidad de Barcelona. Besides the obvious benefits of reducing errors, all these actions illustrate the need for appropriate coordination and communication amongst the different teams involved in order to be successful.

Involvement of family members and patients

It is important that the implementation of a safety plan does not only involve the participation of healthcare professionals, but also that of healthy people (family members) and the patients themselves: patient observations and their participation in reducing errors have shown to increase the efficacy of safety efforts.[23,24]

Information and communication technologies

It is important to recognise the role of information and communication technologies as a tool for reducing errors and improving safety. However they are not effective if they are not implemented correctly because they may even lead to errors ("e-iatrogenesis").[25] Another aspect of patient safety is the safety of the information. An organisation that implements a well developed safety policy will have no issues in terms of the safety of the information contained in the patients' medical records.[25]

To reduce adverse events, emphasis needs to be placed on four aspects, which can be summarised as follows: (1) accept that we are fallible and can make mistakes; (2) apply systems for detecting all errors and their causes; (3) design care systems designed to reduce the likelihood of errors; and (4) recognise quickly the emotional problems of those who care for patients.[26]

To improve patient safety, the magnitude and characteristics of the clinical risk should be assessed; the factors contributing to the onset of incidents related to patient safety should be understood; an assessment should be made of the impact of adverse effects on patients and the healthcare system; and effective, feasible and sustainable solutions should be identified in order to achieve a safer healthcare provision and prevent incidents and adverse effects.[4,27] Likewise, it is also necessary to assume that actions aimed at attaining optimum conditions, in which risks and errors are reduced to an absolute minimum, should be effectively coordinated with all parties involved. Given that the incorporation of any change is a complicated procedure, such changes must constitute a clear improvement over what it was established; then, the proposed changes will be accepted and fully incorporated into the operating procedures of the organisation and will be recognised by all members.

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