

Effective communication for the safe care of patients with ventricular assist device implantation



Comunicação efetiva para o cuidado seguro ao paciente com implante de dispositivo de assistência ventricular

Comunicación efectiva para el cuidado seguro al paciente con implante de dispositivo ventricular

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ABSTRACT

Objective: To report the role of multiprofessional teams in the effective communication and safe care of patients with left ventricular assist device.

Methods: This is an experience report about the use of effective communication for patients with ventricular assist device in a university hospital in southern Brazil. Care based on individualized action and centered on the patients started in 2017.

Results: At the institution, the multiprofessional teams attended training sessions and care protocols were established. The patients and caregivers attended systematic educational sessions and home visits were made to arrange patient discharge and urgency plans. Also, the hospital teams located near the patients' homes received basic training.

Conclusion: Effective communication between multiprofessional teams, patients, and their families when planning care plays a pivotal role in the early identification of possible complications and their prevention, resulting in a greater survival rate and a better quality of life.

Keywords: Patient safety. Patient-centered care. Heart-assist devices. Heart failure.

RESUMO

Objetivo: Relatar a atuação da equipe multidisciplinar na comunicação efetiva e no cuidado seguro aos pacientes com dispositivo de assistência ventricular.

Método: Relato de experiência sobre o uso da comunicação efetiva no cuidado a pacientes com dispositivo de assistência ventricular em hospital universitário do sul do Brasil. A referida assistência iniciou em 2017, pautada na individualização das ações e na perspectiva do cuidado centrado no paciente.

Resultados: Na instituição foram capacitadas equipes multiprofissionais, estruturados protocolos assistenciais, realizadas sessões educativas sistemáticas para pacientes e cuidadores. Foram executadas visitas domiciliares para planejamento de alta hospitalar e plano para situações de urgência, além de capacitações básicas para as equipes dos hospitais próximos à residência dos pacientes.

Conclusões: A comunicação efetiva entre equipe multiprofissional, pacientes e cuidadores no planejamento do cuidado em saúde tem papel fundamental para identificar precocemente possíveis complicações, preveni-las e possibilitar maior sobrevida e qualidade de vida a esses pacientes.

Palavras-chave: Segurança do paciente. Assistência centrada no paciente. Coração auxiliar. Insuficiência cardíaca.

RESUMEN

Objetivo: Informar la actuación del equipo multidisciplinario en la comunicación efectiva y cuidado seguro a los pacientes con dispositivo de asistencia ventricular.

Método: Se trata de un relato de experiencia sobre el uso de la comunicación efectiva en la asistencia a pacientes con dispositivo de asistencia ventricular en un hospital universitario del sur de Brasil. Esse cuidado, inició en 2017, pautado em la individualización de las acciones y em la perspectiva del cuidado centrado em el paciente.

Resultados: En la institución se capacitaron equipos multiprofesionales, estructurados protocolos asistenciales, realizadas sesiones educativas sistemáticas para pacientes y cuidadores, visita domiciliares para la planificación de alta hospitalaria y plan para situaciones de urgência, además de capacitaciones de urgência, además de capacitaciones básicas para los equipos de los hospitales cercanos a la residencia de los pacientes.

Conclusiones: La comunicación efectiva entre el equipo multiprofesional, pacientes y familiares en la planificación del cuidado en salud tiene un papel fundamental para identificar precozmente posibles complicaciones, prevenirlas y posibilitar mayor sobrevida y calidad de vida.

Palabras clave: Seguridad del paciente. Atención dirigida al paciente. Corazón auxiliar. Insuficiencia cardíaca.

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■ INTRODUCTION

Heart failure (HF) is a complex clinical syndrome with a high prevalence worldwide, in which the heart is unable to pump enough blood to meet metabolic needs⁽¹⁾. When HF is in the advanced stage and refractory to optimized treatment, the heart transplant (HT) is a therapeutic option for patients selected according to clinical criteria and specific conditions⁽²⁾. In patients with contraindication or patients who cannot undergo HT in the short term, ventricular assistance devices (VAD) can provide hemodynamic support and clinical stability as a bridge to HT or even as a destination therapy⁽³⁾.

Thus, long-term VAD is an important therapy for managing advanced HF, representing more than 20,000 cases worldwide⁽⁴⁾. However, VAD is incipient in Brazil mostly because of its high cost. There is no Brazilian record of mechanical circulatory assistance⁽³⁾, but a few dozen implants are estimated to have occurred, especially in the southeast.

The VAD consists of a mechanical pump surgically implanted in the patient's heart with inlet and outlet tubes, a blood pump, a device output cable (driveline), and external power sources. The purpose of the device is to provide adequate cardiac output and reduce the work of the left ventricle⁽³⁾. Such a highly complex therapy allows patients to return to their usual activities although long-term success partly depends on their follow-up by qualified teams⁽⁵⁾ and the correct selection of patients⁽³⁾. The average survival rate after the implant is five years and major complications include infection, right HF, neurological disorder, malfunction of the VAD, and multiple organ dysfunction⁽⁴⁾.

In this context, effective communication - one of the international patient safety goals - becomes a challenge for the provision of safe patient-centered care. Multidisciplinary work is decisive in the quality of care and any faults in communication can be a major cause of adverse events⁽⁶⁾. According to data of the Joint Commission International (JCI), more than 60% of sentinel events are related to communication⁽⁷⁾. Structuring effective communication between those involved in patient care is paramount during hospital stays and after discharge to ensure the continuity of care and the integration of networks that communicate horizontally. This way, patients can adapt to their new routines and feel supported in the care process.

Thus, the aim of this paper is to report the activities of the multidisciplinary team regarding effective communication and safe care to patients with VAD.

■ METHOD

This is an experience report on the use of effective communication in the work of a multidisciplinary team. The team, which was formed to care for patients with VAD implantation, consists of a nurse coordinator of VAD, nurses who specialize in cardiology and/or intensive therapy, nursing technicians, doctors (cardiologists, cardiovascular surgeons and physicians with training in critical care medicine), physiotherapists, dietitians, a psychologist, and a social worker.

Patient care occurs in the HT program of a JCI-accredited public university hospital in southern Brazil. The care of patients with VAD began in November of 2017 based on literature searches, systematic meetings, worker training, and a technical visit to a hospital with expertise in the area, according to the needs and individual requirements of the patients and caregivers.

■ RESULTS AND DISCUSSION

Safe care in this context consists of selecting patients who may benefit from a VAD in terms of clinical and psychosocial criteria, until perioperative care, discharge planning, and transition care. The patients are assessed before implantation to learn more about the potential success rate and identify risks to treatment. As recommended in the literature, patients and caregivers are assessed in terms of bond, cognitive ability, understanding of disease, motivation, treatment proposal, adherence to therapy, and social and emotional support⁽⁸⁾, by means of interviews and specific instruments.

Effective communication for safe care occurs in all the stages of care among the health workers, patients, and caregivers with validation of their understanding. In relation to specific skills, patients and caregivers are observed to determine whether they perform the care effectively in practice. From the perspective of care centered on patients with VAD, the actions were planned and performed according to the individualities of the patients and their caregivers and the support provided by the local health system, considering some patients lived far from the center of reference.

■ Implantation

The VAD implants are currently supplied at a private hospital in São Paulo (SP) funded by the Support Program for the Institutional Development of the Unified Health System (*Programa de Apoio ao Desenvolvimento Institucional do Sistema Único de Saúde* - PROADI-SUS), a philanthropic government project linked to private institutions of excel-

lence in Brazil. The aim is to improve the survival rate and quality of life of patients who would otherwise have to depend solely on clinical drug treatment.

The care process began when the patients and caregivers jointly decided to accept implantation of the device. After the health team provided all the details regarding the therapy, the patients received educational material and, when possible, exchanged experience with patients who already had VAD.

Next, the case of each patient was discussed with the team responsible for implantation in SP and, once approved, the patients were referred for surgery accompanied by their caregivers. The patients were transferred in an aerial intensive care unit (ICU) provided by the state of Rio Grande do Sul that is used for patients who need continuous cardiac monitoring and readily available medical and nursing care. The care was transferred from the hospital in Porto Alegre to the hospital in São Paulo through telephone calls and email messages containing the patients' clinical information and laboratory and imaging test, with the patients' consent.

The team of the institution of origin was training in São Paulo regarding the stages involving VAD implantation and maintenance. On this occasion, the team attended expository dialog classes, clinical meetings, surgeries, and outpatient consultations. This unique learning experience provided an opportunity to apply the knowledge acquired with the supervision and guidance of experienced professionals and training at a center of reference in Brazil in quality care and patient safety, also accredited by the JCI.

The safe care process

Based on this experience and recommendations^(3,8), the professionals created protocols for patient care during and after hospitalization containing guidelines such as wound care, checking mean arterial pressure, and different system verification checklists with recommended frequency. Corroborating with the literature⁽⁹⁾, our experience shows that multidisciplinary constructed using checklists optimizes communication between teams and patients, boosts compliance with quality and safety standards, and reduces infection, thus enabling the structuring and daily review of the established therapeutic and self-care routines.

After implantation of the VAD, as soon as the patients were stable, they were referred back to Porto Alegre with their caregivers to continue treatment at the hospital of reference, where the knowledge acquired and structured care planning were shared in theory and practice classes with the multidisciplinary teams. In the institution, the multidisciplinary team initiated a discharge plan that included

teaching the patients and caregivers to manage the device, referencing and training of the local service network, and home visits to assess care and adapt the daily guidelines to the patients' homes.

Educating patients and caregivers for safe care

The process of educating patients and caregiver should be continuous, from referral to follow-up after discharge⁽³⁾. During the hospital stay, daily educational sessions were held with the respective caregivers to prepare them for care. The theory and practice lessons focused on identifying, reviewing, and handling the external components (system controller and driveline) and accessories (power module, charger, and batteries) and operating, handling, and cleaning the device, in addition to normal parameters and alarms.

The aim of energy source management is to optimize the useful life of the equipment and ensure the safety of patients, who hemodynamically depend on a fully-operating pump. The pump and the system controller are connected by the driveline - a cable that comes out through the patient's abdomen. The driveline exit point is a small abdominal perforation that requires specific care. An infection in this location is one of the major complications of this procedure, with an incidence of 19% to 35%⁽¹⁰⁾. To avoid accidentally pulling the cable, it must be fixed at 4 cm from the ostium and the region must be covered with a dressing placed using an aseptic technique and a surgical mask. Therefore, the caregivers learned the technique in the clinical practice with sterile gloves or a sterile bandage kit. According to the caregivers' skills when using the instruments and the feasibility of accessing material in the public health system, the team defined the best strategy for the caregivers' situation.

Since home care is a fundamental part for the success of VAD implantation and according to the recommendations of the literature⁽³⁾, the patients of our center regularly send images of the VAD exit site to the nurse coordinator. They are also advised to communicate any changes or signs of infection in the driveline exit site to the reference team, as recommended⁽³⁾.

As for personal hygiene, the care plan included showering with a waterproof bag to protect the external part of the equipment and the exit site. The caregivers were trained to clean the external equipment every week with disinfectant based on quaternary ammonium and to restrict bathing (sea, river, pool or hot tub).

Specific guidelines for patients with HF were also reinforced to ensure they maintained a healthy and low-sodium diet, controlled their bodyweight on a daily basis and their mean blood pressure, and exercised regularly. Re-

ferrals to cardiac rehabilitation were included, when this service was available. Patients and caregivers were trained in pharmacotherapy and indications and adverse effects, with emphasis on oral anticoagulation with coumaric acid, its risks, indications, daily care, and complications. Furthermore, before hospital discharge, they were given documentation to carry every day to ensure access to locations with metal detectors and trips with their equipment.

Local health care

The primary care system agreed to provide the supplies and lend the forceps kits or sterile gloves the patients needed to dress the site. The health teams in the hospitals close to the patients' homes were trained to check mean blood pressure, identify any faults in the pump, and change the system controller in emergencies. They also learned the procedure in case of cardiopulmonary arrest. The teams were allowed to ask questions and exchange information and the literature on the subject.

Technical, cognitive, psychological, and social issues should be assessed and resolved prior to hospital discharge and home visits are often needed to prepare for the patient's arrival⁽⁹⁾. Thus, home visits with the caregivers were made for this purpose and to adjust the home to the patient's needs in terms of power supply and an emergency plan in case of extended power cuts.

To guarantee patient safety after discharge, the health team monitored the entire process every week at a distance through phone calls, text messages, and email. Moreover, the patients or caregivers could contact the health team immediately through the VAD coordinator nurse in case of doubts or emergencies.

The patients using the VAD continued with monthly follow-ups at the HF outpatient unit of the hospital of reference. The follow-up included a care review, supervised dressing changes by the caregivers, and device handling.

■ FINAL CONSIDERATIONS

Effective communication between the multidisciplinary teams, patients and caregivers when planning the care of patients with VAD plays a pivotal role in preventing and identifying complications and in guaranteeing the benefits of this costly and highly complex technology.

Safe and risk-free care is provided by specialized teams

with the effective participation of trained patients and caregivers and the support networks prepared to act in emergency situations. The fact that this is an experience report is considered a limitation. More robust studies are required to address the dissemination of this technology in Brazil. The systematization presented here, however, combined with the effective communication of all the parties involved, qualifies the multidisciplinary care for patients with VAD and improves their survival rate and quality of life.

■ REFERENCES

1. Comitê Coordenador da Diretriz de Insuficiência Cardíaca (BR). Diretriz Brasileira de Insuficiência Cardíaca Crônica e Aguda. *Arq Bras Cardiol*. 2018 [cited 2018 Jul 10];111(3):436-539. Available from: <http://publicacoes.cardiol.br/portal/abc/portugues/2018/v11103/pdf/11103021.pdf>.
2. Bacal F, Marcondes-Braga FG, Rohde LEP, Xavier Júnior JL, Souza Brito F, Moura LZ, et al. 3ª Diretriz Brasileira de Transplante Cardíaco. *Arq Bras Cardiol*. 2018;111(2):230-89. doi: <http://dx.doi.org/10.5935/abc.20180153>.
3. Ayub-Ferreira SM, Souza Neto JD, Almeida DR, Biselli B, Avila MS, Colafranceschi AS. Diretriz de Assistência Circulatória Mecânica da Sociedade Brasileira de Cardiologia. *Arq Bras Cardiol*. 2016;107(2 supl. 2):1-33. doi: <https://doi.org/10.5935/abc.20160128>.
4. Kirklin JK, Pagani FD, Kormos RL, Stevenson LW, Blume ED, Myers SL, et al. Eighth annual INTERMACS report: special focus on framing the impact of adverse events. *J Heart Lung Transplant*. 2017;36(10):1080-6. doi: <https://doi.org/10.1016/j.healun.2017.07.005>.
5. Agrawal S, Garg L, Shah M, Agarwal M, Patel B, Singh A, et al. Thirty-day readmissions after left ventricular assist device implantation in the United States: insights from the nationwide readmissions database. *Circ Heart Fail*. 2018 Mar;11:e004628. doi: <https://doi.org/10.1161/CIRCHEARTFAILURE.117.004628>.
6. Nogueira JWS, Rodrigues MCS. Effective communication in teamwork in health: a challenge for patient safety. *Cogitare Enferm*. 2015;20(3):636-40. doi: <https://doi.org/10.5380/ce.v20i3.40016>.
7. Wachter, Robert M. *Compreendendo a segurança do paciente*. 2. ed. Porto Alegre: AMGH, 2013.
8. Feldman D, Pamboukian SV, Teuteberg JJ, Birks E, Lietz K, Moore SA, et al. The 2013 international society for heart and lung transplantation guidelines for mechanical circulatory support. *J Heart Lung Transplant*. 2013;32(2):157-87. doi: <https://doi.org/10.1016/j.healun.2012.09.013>.
9. Barcellos, RA. *Impacto da aplicação de uma lista de verificação em round multiprofissional nos tempos de ventilação mecânica e permanência em unidades de terapia intensiva [tese]*. Porto Alegre (RS): Pontifícia Universidade Católica do Rio Grande do Sul, Programa de Pós-graduação em Medicina e Ciências da Saúde; 2018.
10. Dean D, Kallel F, Ewald GA, Tatoes A, Sheridan BC, Brewer RJ, et al. Reduction in driveline infection rates: results from the HeartMate II multicenter driveline Silicone Skin Interface (SSI) registry. *J Heart Lung Transplant*. 2015 June;34(6):781-9. doi: <https://doi.org/10.1016/j.healun.2014.11.021>.

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