



Nursing Care Plan for Transcatheter Aortic Valve Implantation with the Medtronic CoreValve Revalving® system

<u>Patients risks and needs</u>	<u>Purpose/Expected results</u>	<u>Nursing care</u>
<u>Loss of autonomy</u> linked to: Intensive-care environment, weakness, equipment, bed rest	The patient will recover autonomy as quickly as possible Necessary accommodations will be made to address the needs of the patient during his loss of autonomy	Conduct a rigorous medical history regarding needs Perform hygiene care for the patient as soon as he has an external pacing lead Provide necessary assistance for absorption of food Remove bladder catheter as soon as possible (with medical consent) Make means of calling for aid and assistance available to the patient
<u>Risk of impairment of oral mucosa</u> linked to: Fasting, treatments	The patient will retain his oral integrity	Rinse with antiseptic mouthwash or brush teeth twice a day Monitor oral mucosa
<u>Risk of nausea, vomiting, and inhalation</u> linked to: Intervention, sedation, resting in dorsal decubitus	The patient will be placed in a dorsal decubitus position to prevent aspiration; bed rest will be continued The patient will not have nausea or vomiting	Upon return from the intervention, raise the backrest 20 degrees Maintain fast for 2 hours after the intervention Evaluate nausea/vomiting Treat nausea/vomiting according to medical prescriptions or permanent orders

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<p><u>Risk of malnutrition</u> linked to: Fasting, loss of autonomy in feeding oneself</p>	<p>The patient will benefit from nutritional and fluid intake corresponding to his needs</p>	<p>Resume feeding a minimum of 2 hours after returning from the intervention Plan a regime adapted to the needs of the patient Add an intravenous glucose solution if fasting longer than 24 hours (by medical orders) Parenteral nutrition if fasting longer than 48 hours (by medical orders) Check agreement between water and food intake prescribed and received Observe integuments Monitor glucose level through blood chemistry test at least twice a day Weigh twice a week</p>
<p><u>Risk of spatial-temporal disorientation with risk of fall and disconnection of various pieces of equipment</u> linked to: Sedation, low cardiac output, day-night confusion, intensive care environment</p>	<p>The patient will be oriented to both time and space The patient will respect monitoring put in place via various pieces of equipment</p>	<p>Check space-time orientation upon return from intervention Orient patient in space and time if necessary Check that the patient can see a clock Reduce lighting and limit noise at night Offer the patient a radio in the room for the daytime Attach the various pieces of equipment Explain to the patient the importance of the equipment and the need for care during movements so as not to disconnect the equipment Put the bars of the bed in place Put restraints in place if prevention and restructuring are ineffective</p> 

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<u>Strict bed rest during 24-48 hours</u> linked to: Presence of cardiac pacing lead, points of puncture and surgical approaches	The patient will understand and apply the information given regarding mobilisation The patient will tolerate and respect the lying position	Explain the reasons for and importance of bed rest Check comprehension and application of information given Ensure comfortable setup of the bed Put a dynamic mattress in place Move the patient at least twice a day with monitoring of friction and support points On the third day, with medical approval, transfer the patient to a chair
<u>Prohibition of raising arms above shoulders</u> linked to: Pacing lead implanted via jugular or subclavian access	Pacing lead will remain in place in the heart chambers The patient will not raise arms over the level of the shoulders	Explain to the patient the prohibition on raising arms over shoulders while using the pacing lead Put the call button in his reach
<u>Risk of renal insufficiency</u> linked to: Contrast agent, lack of hydration, drug treatment, embolism, low cardiac output, haemorrhage	The patient will maintain optimal renal function (urine output > 0.5 ml/kg/h). The patient will maintain normal blood chemistry (urea, creatinine, electrolytes)	Administer intravenous fluids according to medical orders (1 litre of saline solution over 8-12 hours depending on cardiac function) upon return from intervention Encourage patient to drink upon post-intervention waking Track urine output (quantity, colour) hourly Check fluid balance once daily Monitor renal function and electrolytes through daily blood chemistry tests Report any anomalies to the doctor

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<p><u>Risk of constipation</u> linked to: Bed rest</p>	<p>The patient will maintain regular and effective bowel movements</p>	<p>Monitor stool daily Continue possible personal laxative treatment of the patient according to medical orders</p>
<p><u>Risk of anxiety and discomfort on the part of the patient and his family</u> linked to: Lack of knowledge regarding the locations, personnel, equipment, pathology and techniques used; uncertainty regarding evolution of the pathology; lack of information; loss of autonomy</p>	<p>The patient and his family will be informed, reassured as needed, and a trusting relationship will be established Patient and family will be permitted to express their concerns and will understand the clinical situation</p>	<p>Welcome the family Introduce the medical and care teams Provide necessary information about the clinical situation and the organization of service Be there to listen to the patient and family Allocate visiting time as appropriate to the situation Judiciously regulate the alarms of the equipment and adjust their volume Reduce lighting and noise at night Arrange care to allow time for the patient to rest Provide anxiety treatment if necessary (according to medical orders) Give patient information concerning his unmet care needs Listen, inform, and, if needed, reassure the patient and his family with regard to their anxieties and fears Put the bell and personal effects within reach Explain the role of monitoring and inform the patient of the risk of “false alarms” Invite questions and answer them in accordance with the patient and his family's ability to understand</p> 

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<p><u>Risk of haemodynamic disturbance</u> linked to: Intervention, sedation, heart failure, haemorrhage</p>	<p>The patient will not present signs of hypovolemia He will maintain an average arterial pressure \geq 65 mmHg and urine output $>$ 0.5 mL/kg/h The patient will not present signs of tamponade; if necessary, these will be detected and treated as quickly as possible</p>	<p>Monitor heart rate, blood pressure, respiratory rate, SaO₂:</p> <ul style="list-style-type: none"> – upon return from intervention – every 15 minutes for 1 hour – every 30 minutes for 1 hour – every hour <p>Monitor and consider patient anxiety Observe coloration of extremities and the face In case of tamponade (or suspicion thereof):</p> <ul style="list-style-type: none"> – Put in semi-seated position – Call the doctor (urgent) – Provide O₂ by facemask – Prepare an i.v. infusion of Volulyte 6%® – Measure blood pressure every 5 minutes – Provide emotional support for the patient – Assist the doctor with required procedures (e.g., pericardiocentesis)
<p><u>Risk of arrhythmia</u> (Flutter, atrial fibrillation, ventricular extrasystoles, sinus tachycardia) <u>and/or conduction disorder</u> (left branch block, atrioventricular block) linked to: Expansion of the valve, the pacing lead (ineffective), electrolyte abnormalities, treatments</p>	<p>The patient will maintain haemodynamic stability Any problem with rhythm or conduction will be detected and treated as soon as possible The pacing lead will remain in place in the heart chambers</p>	<p>Check proper connection of the external pacemaker case and proper connection of the cables Monitor, detect, and report any problem with conduction and/or rhythm Follow medical orders (e.g., drugs, external cardiac stimulation) Remove pacing lead upon medical advice</p>

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<p><u>Risk of acute pulmonary oedema (APO)</u> linked to: Mitral insufficiency, cardiac decompensation, malposition of the valve, fluid overload, sudden hypertension</p>	<p>The patient will not develop APO If APO does develop, it will be detected, noted, and treated as quickly as possible</p>	<p>Monitor blood pressure, SaO₂, respiration rate, and breath sounds every hour at a minimum Monitor the coloration of the face and extremities Monitor fluid balance Be attentive to any respiratory difficulty expressed by the patient; if necessary, raise the patient to a seated position and administer O₂ by mask Report any anomalies to the doctor Administer diuretics and/or antihypertensive treatment on medical prescription</p>
<p><u>Risk of infection</u> linked to: Intervention, punctures and surgical approaches, prosthetic material, intravascular and bladder catheters, environment</p>	<p>All infections will be avoided If necessary, infections will be detected as soon as possible, controlled, and treated Catheterised veins will remain supple, painless, and without infiltrates</p>	<p>Monitor operation and puncture sites 3 times a day Remove any useless or questionable access points Remove drain on the first postoperative day according to medical orders Remove the bladder catheter upon medical authorization Ensure dressings are clean and occlusive Change dressings when necessary and at a minimum of every 4 days if transparent and every day if opaque Administer antibiotics according to medical orders Monitor temperature every 3 hours Perform blood cultures if temperature >38.5°C Monitor inflammation through daily blood chemistry analysis Ensure strict hygiene</p>

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<p><u>Risk of allergy/anaphylactic shock</u> linked to: Contrast agents, other treatments</p>	<p>The patient will not be given a substance to which he is allergic If an allergic reaction occurs, it will be detected and treated as soon as possible</p>	<p>Perform a complete medical history Monitor the patient's appearance for signs of an allergic reaction (e.g., skin changes, respiratory distress) Report any anomalies to the doctor Follow medical orders (e.g., corticosteroids, epinephrine, antihistamines) refill,...) Record any allergies in the patient's chart</p>
<p><u>Risk of haemorrhage</u> linked to: Points of puncture and surgical approaches, anticoagulants <i>Lumbar pain and/or acute abdominal pain should raise the possibility of a retroperitoneal haematoma, especially if accompanied by a vagal reaction.</i></p>	<p>The patient will have no signs of haemorrhage, including bruises at puncture sites, increased drainage volume, retroperitoneal haematoma, tamponade, or shock</p>	<p>Monitor for the appearance of blood in dressings and drain at least:</p> <ul style="list-style-type: none"> – upon return from intervention – every fifteen minutes for 1 hour – every thirty minutes for 1 hour – every hour for 3 hours – every 3 hours. <p>Explain to the patient the importance of keeping the punctured leg and arm extended and of remaining immobile on their back for at least 12 hours Report any bleeding to the doctor Follow medical orders regarding compressive dressings and transfusions Monitor haematological balance and coagulation parameters 4 times a day according to medical orders Evaluate pain via an analogue visual scale every 3 hours Monitor haemodynamic status rigorously</p>

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<p><u>Risk of thromboembolism and/or ischemia of limbs</u> linked to:</p> <p>Bed rest, invasive materials, lack of anticoagulation, arrhythmia, haematoma, embolism, catheterisation, vascular injury</p>	<p>Thromboembolic and/or ischemic phenomena will be absent</p> <p>Instances of ischemia will be detected and treated as soon as possible</p>	<p>Monitor cardiac enzymes through blood chemistry testing four times daily (CPK, CPKMB)</p> <p>Evaluate pain by an analogue visual scale every three hours</p> <p>Monitor 12-lead electrocardiogram continuously</p> <p>Provide oxygen therapy as needed (target SaO₂>95% and venous PO₂ >75%)</p> <p>Print electrocardiogram once daily according to medical orders</p> <p>Monitor pupils upon arrival of the patient and at least 3 times a day</p> <p>Evaluate neurological score (Glasgow) every 3 hours for 24 hours, then once a day</p> <p>Monitor peripheral pulse, coloration and warmth of limbs, sensitivity/mobility of limbs and pain upon return from the intervention and at least 3 times daily</p> <p>Monitor coloration and temperature of limbs</p> <p>Administer support stockings on medical prescription</p> <p>Administer anticoagulants according to medical orders</p> <p>Transfer the patient to a chair as soon as possible according to medical orders</p> <p>Report any anomalies to the doctor</p> <p>Monitor serum lactate according to medical orders (at least once a day)</p>

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