

Research allows for reduction of resting time after cardiac catheterization

In addition to increasing the comfort of patients, a study allowed the increase of the number of appointments in HCPA (Hospital de Clínicas de Porto Alegre)

By Amanda Hamermüller

Cardiac catheterization is a procedure performed to diagnose or treat various heart diseases. From this procedure, it is possible to assess the functioning of the heart, to visualize if there is obstruction of the coronary arteries (which supply oxygen to the heart) or the presence of fat plaques, among other activities. According to the specialist in interventional cardiology, Marco Wainstein (MD), the procedure is indicated for patients with symptoms of heart attack, functional tests compatible with ischemia, and valvular heart disease (when one or more heart valves do not work correctly).

The procedure is performed in the hemodynamics sector by interventional cardiologists with the help of a team, as well as X-ray machines, electrocardiogram and blood pressure monitors, and video recorders appropriate for recording the state of the heart. The doctor punctures the femoral artery, in the leg, near the groin, or the radial, in the wrist, in a procedure that allows the accomplishment of arterial blood gas test, which provides the pH of the blood. The catheter, a long, flexible tube, is placed through an introducer and guided into the heart so that the organ and the condition of the coronary arteries can be analyzed.

At the Hospital de Clínicas de Porto Alegre (HCPA), many procedures were no longer performed due to lack of beds in the observation room. Cardiology nurse Roselene Matte, together with the nurses Thamires de Souza Hilário, Rejane Reich, Graziella Badin Aliti, and Eneida Rejane Rabelo da Silva, carried out a study to test the hypothesis of reduction of rest time from five to three hours after cardiac catheterization without the increase of complications related to femoral arterial puncture. According to Roselene, in 2008, with her removal to the hemodynamics unit, she was required to take a postgraduate course in cardiology, which eventually evolved into a master's degree. "I wanted to study something that would come to benefit our unit," she recalls. The article, extracted from Roselene's master's thesis, defended in the Graduate Program in Nursing at the Federal University of Rio Grande do Sul, consolidated the proof of a practice already performed in other places in Brazil and the world. "This reduction is already a trend in other places, but we needed a test to put it into practice here," she says.

Intervention

The intervention was performed in the hemodynamics laboratory of HCPA, and the participants were divided into two groups. In the Intervention Group (IG), the patients remained in the unit for three hours, while the Control Group (CG) remained for five hours. All participants were evaluated every hour and contacted in the intervals of 24, 48 and 72 hours after hospital discharge.

In the IG, the patients were maintained in bed rest, lying belly up for two hours after the end of the manual compression for blood stagnation after the withdrawal of the catheter introducer. After this period, participants remained with the headboard elevated at 45 degrees for 60 minutes and then walked for ten minutes. After that, the team instructed the patients to sit down in bed until they completed five hours of rest, then they were discharged and could leave the hospital walking.

In the CG, the were patients maintained in bed rest, lying belly up, for four hours after the end of the manual compression. Then they stayed with the headboard elevated at 45 degrees for 60 minutes and then walked for ten minutes. The patients were then discharged and could



Research proposes reduction of resting time after cardiac catheterization from five to three hours – Photo: Markus Spiske/Flickr CC BY 2.0

leave the hospital walking.

All participants received an instruction sheet containing descriptions and illustrations of bleeding, bruising, skin blemishes and pseudoaneurysms (changes in the arteries), as well as a ruler, with which they could measure any complications visible at the puncture site.

The teams in the hemodynamics laboratory were not aware of which patients belonged to which group until the second hour of bed rest.

Results

At the outset, there were 2,827 eligible patients. Of these, 387 were eliminated because they had at least one of the exclusion criteria:

- restriction on small walks;
- use of oral anticoagulants;
- body mass index (BMI) greater than 35 kg / m²;
- hypertensive patients with systolic blood pressure greater than or equal to 180 mmHg and diastolic blood pressure greater or equal to 110 mmHg at the end of the procedure;
- patients with a history of previous uncontrolled bleeding.

Thirty-seven patients declined to participate in the study, and 1,673 were excluded for other reasons, such as being hospitalized, having some cognitive impairment, or having gone through radial puncture or right heart catheterization, which was not the focus of the study.

Researchers' logistics issues, such as vacations and relays, also influenced. To perform the research, 730 patients remained: 367 for IG and 363 for CG.

Telephone contact was not possible within 24 hours after hospital discharge with 22 IG patients and 26 CG patients, with 345 and 337 patients remaining at the end of the study, respectively. In the IG, 211 women participated, and in the CG, 196, totaling 407 female patients to 323 males. Participants in both groups were around 60 years of age.

Regarding cardiac complications after cardiac catheterization, the hematoma was the most frequent in both groups – 12 in IG and 13 in CG, followed by bleeding – 4 in IG and 6 in CG – and, then, by decrease in blood pressure and heart rate – 5 in IG and 4 in CG. After hospital discharge, the absence of complications prevailed in both groups.

Roselene concluded that the strategy of reducing the rest time to three hours was positive. "It is important to note that this reduction brings more comfort to patients and also opens the possibility of performing more procedures," she notes. Presently, the reduction of time is fully implemented in the HCPA, which makes it possible to increase the number of services performed.

The nurse said she was surprised it had such a big repercussion. "I was recognized in countless situations, including events at the hospital's presidency," she recalls. She points out that group work was crucial for the study to be carried out. "Colleague-nurses, as well as other hospital staff, were unanimous in accepting and valuing the research, because they understood it would help a lot of people," she says.

As for future projects, Roselene is already thinking about doing research in this same context in other areas. "We want to do a job with patients who undergo angioplasty because they stay in here for four hours, so we want to reduce the length of their stay," she says.

Scientific paper

MATTE, Roselene et al. Redução do repouso de cinco para três horas não aumenta complicações após cateterismo cardíaco: THREE CATH Clinical Trial. Rev. Latino-am. Enfermagem, 2016.

Master's Degree Thesis

Title: Repouso de três horas no leito após cateterismo cardíaco diagnóstico com introdutor 6 french não aumenta complicações decorrentes da punção arterial: ensaio clínico randomizado

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