

Long-Term Prognosis in Young Patients with Stable Coronary Disease: Ten-Year Follow-up of Percutaneous Coronary Intervention

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ABSTRACT

Background: The long-term prognostic implications of stable coronary artery disease (CAD) in young patients are currently unknown. The objective of this study was to evaluate the prognosis of young adult patients diagnosed with stable CAD who were treated by percutaneous coronary intervention (PCI) and followed for up to ten years. **Methods:** The study population consisted of young patients (age below the 10th percentile) from a group of 1,394 consecutive patients treated for stable CAD using the percutaneous approach. The patients' characteristics were prospectively collected. After the procedure, outpatient follow-up was conducted, including the analysis of the electronic medical records and telephone contact, whenever required. The primary outcome was overall mortality, and the secondary outcome was cardiovascular mortality. **Results:** A total of 140 patients were selected, with a mean age of 43.7 ± 4 years (ranging from 26 to 48 years), who were predominantly males (76.4%). Diabetes mellitus was present in approximately one fifth of the patients, and half of them had a previous myocardial infarction. Patients were followed for an average of 94.6 ± 36.2 months, and the overall mortality after ten years was 6%, with a cardiac mortality of 5.3%. All patients who died had a successful index procedure, and only one of the cases did not have a previous myocardial

RESUMO

Prognóstico Tardio em Jovens com Coronariopatia Estável: Evolução em 10 Anos após Intervenção Coronária Percutânea

Introdução: Atualmente são ainda desconhecidas as implicações prognósticas tardias da doença arterial coronária (DAC) estável em pacientes jovens. O objetivo deste trabalho foi avaliar o prognóstico de pacientes adultos jovens com diagnóstico de DAC estável, tratados por meio de intervenção coronária percutânea (ICP) e acompanhados por até 10 anos. **Métodos:** A população do estudo foi constituída por pacientes jovens (idade abaixo do 10^o percentil) de um grupo de 1.394 pacientes consecutivos tratados para DAC estável por via percutânea. As características dos pacientes foram coletadas prospectivamente. Após o procedimento foi realizado seguimento ambulatorial, com análise do prontuário hospitalar eletrônico e contato telefônico, quando necessário. O desfecho primário foi a mortalidade geral e o desfecho secundário, a mortalidade cardiovascular. **Resultados:** Foram selecionados 140 pacientes, com média de idade de $43,7 \pm 4$ anos (mínimo de 26 anos e máximo de 48 anos), predominantemente do sexo masculino (76,4%). Diabetes melito estava presente em aproximadamente um quinto dos pacientes e metade apresentava infarto prévio. Os pacientes foram seguidos por uma média de $94,6 \pm 36,2$ meses e a mortalidade geral no

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infarction. **Conclusions:** In this clinical practice, young patients with chronic CAD treated by PCI had good late prognosis.

DESCRIPTORS: Angioplasty. Coronary disease. Age groups. Prognosis.

Several studies defining the role of percutaneous coronary intervention (PCI) in coronary artery disease (CAD) have discussed the individualised indication of this procedure, aiming to better identify patients who will benefit from interventional treatment. However, due to the higher prevalence of CAD after the sixth decade of life,¹ much of the available scientific information about the disease has come from studies in which young patients are underrepresented.^{2,3} Few studies have been focused on the implications of CAD in young populations,²⁻⁶ and even these studies have focused on the disease presenting as an acute coronary syndrome.^{3,6}

The prognostic implications of CAD in its stable form are still currently unknown in young patients. In theory, the early onset of the disease could indicate a worse long-term prognosis, due to the possible increased aggressiveness of the disease that led to its manifestation at a young age. Conversely, diagnosis at an early stage could represent an opportunity for clinical actions to prevent atherosclerotic progression.

The objective of this study was to evaluate the clinical characteristics and late mortality in a population of young patients with stable CAD treated by percutaneous coronary intervention.

METHODS

Study population

The study population was retrospectively selected from a cohort of 1,394 patients living in the State of São Paulo who were consecutively admitted between 1998 and 2003 by the Brazilian Unified Health System (Sistema Único de Saúde – SUS) for the percutaneous treatment of chronic stable coronary disease, defined as the presence of angina or documented silent ischemia with no acute events in the previous 30 days. Data collection was approved by the ethics committee of the institution.

The age range of the population treated in this centre below the 10th percentile for age was defined as young, which totalled 140 individuals. The clinical

seguimento de 10 anos foi de 6%, com mortalidade cardíaca de 5,3%. Todos os pacientes que morreram obtiveram sucesso no procedimento inicial e apenas um dos casos não apresentava infarto prévio. **Conclusões:** Em nossa prática clínica, pacientes jovens com coronariopatia crônica tratados com ICP mostraram ter bom prognóstico tardio.

DESCRITORES: Angioplastia. Doença das coronárias. Grupos etários. Prognóstico. Stents. Anticoagulantes. Fondaparinux.

and angiographic characteristics of the study population were prospectively registered for all patients. The intervention technique and strategy were decided by the hemodynamics specialist in charge of each case. Only bare-metal stents were used.

Clinical follow-up

The follow-up and recording of in-hospital mortality were obtained for all patients after the index procedure. The follow-up evaluation after hospital discharge was performed at the outpatient cardiology clinic of the institution and verified through the analysis of hospital records or by telephone contact, when necessary. The cause of death was classified as cardiac or non-cardiac. The primary endpoint of this study was the occurrence of death from any cause, and cardiac mortality was assessed as a secondary outcome.

Cardiac death was defined as any death except that with an unequivocal non-cardiac cause, as demonstrated by data in the medical file or an autopsy or as reported on the death certificate.

Statistical analysis

Categorical variables were shown as percentages, and continuous variables were shown as means and standard deviations. Comparison between categorical variables was performed using the chi-squared test. The cumulative incidence of death was estimated according to the Kaplan-Meier method. Patients lost to follow-up were considered at risk until the date of the last contact, from which point they were eliminated from the analysis.

RESULTS

Patients had a mean age of 43.7 ± 4 years (minimum 26 years and maximum 48 years) and were predominantly male (76.4%). At the time of the index procedure, one quarter of the patients were obese (defined as body mass index [BMI] > 30 kg/m²), and two thirds (66.4%) had dyslipidaemia. One third (31.4%) were active smokers, and diabetes was present in approximately one fifth

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