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Original Article

Middle-Term Assessment of Cardiovascular Risk Factor Control in a Prospective Cohort of High-risk Patients Treated by Percutaneous Coronary Intervention

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ABSTRACT

Background: Secondary prevention after percutaneous coronary intervention (PCI) is essential to increase event-free survival and consists mainly in risk factor control. We analyzed the secondary prevention of high-risk patients included prospectively in the Sequence Variation in Platelet Aggregation in Response to Clopidogrel and aspirin trial (SPARC). **Methods:** From December 2009 to February 2011 we enrolled 187 consecutive patients who were submitted to PCI with stent implantation and were evaluated in outpatient visits at 1, 3, 6, and 12 months of follow-up for the control of hypertension, dysglycemia, hyperlipidemia and smoking and their respective therapeutic measures. **Results:** There was a significant increase in the number of patients with controlled hypertension (29%; P = 0.02), who stopped smoking (18%; P = 0.003), and received statins (19%; P < 0.0001) between the index PCI and the first follow-up visit. The risk factor control improvement led to a decrease in the mean Framingham risk score (9.9%; P < 0.0001). During the 12 months follow-up the gains achieved at PCI admission were maintained for all risk factors. **Conclusions:** An important effect was observed on the index PCI admission with increased prescription of risk factor

RESUMO

Avaliação a Médio Prazo do Controle de Fatores de Risco de Doença Cardiovascular em Coorte Prospectiva de Pacientes de Alto Risco Tratados por Intervenção Coronária Percutânea

Introdução: A prevenção secundária após intervenção coronária percutânea (ICP) é fundamental para melhorar a sobrevida livre de eventos e consiste principalmente no controle de fatores de risco. Analisou-se a prevenção secundária de pacientes de alto risco, incluídos prospectivamente no estudo *Sequence Variation in Platelet Aggregation in Response to Clopidogrel and aspirin* (SPARC). **Métodos**: Foram arrolados 187 pacientes consecutivos entre dezembro de 2009 e fevereiro de 2011, tratados por ICP com *stent* e avaliados em retornos ambulatoriais de 30 dias, três meses, seis meses, e 12 meses quanto ao controle de hipertensão arterial, disglicemia, dislipidemia e tabagismo, e medidas terapêuticas respectivas. **Resultados**: Houve aumento significativo de pacientes com controle pressórico (29%; P = 0,02), que cessaram tabagismo (18%; P = 0,003), e que receberam hipolipemiantes (19%; P < 0,0001) entre a internação para ICP e o primeiro retorno após o

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control drugs and achievement of therapeutic goals. This study identifies a relevant opportunity window for risk factor control at the index admission, when substantial gains are observed and maintained. However, it also shows further efforts are required to expand the benefit of secondary prevention in the middle-term follow-up of patients treated by PCI.

DESCRIPTORS: Coronary artery disease. Angioplasty. Stents. Risk factors. Disease prevention.

procedimento. Esse melhora do controle de fatores de risco refletiu-se em redução do escore de risco de Framingham médio observado no mesmo período (9,9%; P < 0,0001). Durante seguimento de até 12 meses o ganho atingido na internação para ICP se manteve para todos os fatores de risco. **Conclusões**: Observou-se efeito importante relativamente à internação índice para ICP, com aumento da prescrição de medicamentos para controle de fatores de risco e alcance de metas. Esse estudo identifica relevante janela de oportunidade para priorização do controle de fatores de risco na internação inicial, quando expressivos são observados e mantidos. Mas também explicita que esforços adicionais são necessários para expandir o benefício da prevenção secundária no seguimento a médio prazo de pacientes tratados por ICP.

DESCRITORES: Doença da artéria coronariana. Angioplastia. Stents. Fatores de risco. Prevenção de doenças.

According to data from the Department of Informatics of the Brazilian Unified Health System (Departamento de Informática do Sistema Único de Saúde – DATASUS), in the year 2012, cardiovascular diseases were the main cause of morbidity after the age of 39 years. In that year, they represented 20.95% of 1,004,004 hospitalizations at this age range.[1] Cardiovascular diseases are also the leading cause of mortality in this same age group, with 641,424 deaths, representing 30.84% of the deaths recorded in the DATASUS information system in 2010.[2]

Percutaneous coronary intervention (PCI) has become the most used treatment in the spectrum of coronary heart disease, surpassing coronary artery bypass graft (CABG) surgery, wether to relieve angina symptoms, to improve quality of life, or to decrease mortality in different clinical contexts.[3] In this context, there are patients with severe cardiovascular dysfunction due to the presence of coronary atherosclerotic disease and multiple associated risk factors. The secondary prevention in these patients, after PCI treatment, becomes critically necessary to reduce subsequent adverse cardiovascular events, requiring changes in lifestyle and control of risk factors with behavioral measures and medication.[4] However, the integration of preventive measures in daily clinical practice is still poor,[5] and the discontinuation of prescribed medications is common after acute events;[6,7] moreover, it is very difficult to implement lifestyle changes.

The aim of this study was to evaluate the short- and mid-term control of risk factors in patients undergoing PCI. These patients were prospectively included in the single-center research project Sequence variation in Platelet Aggregation in Response to Clopidogrel and aspirin (SPARC), which investigates platelet aggregation and its determinant genes in a cohort treated by PCI, and is in its final phase of follow-up.

METHODS

SPARC is a single-center study that enrolled consecutive patients between December of 2009 and February of 2011, who underwent PCI with stenting and signed an informed consent. Patients were excluded when they were not treated with dual antiplatelet therapy with acetylsalicylic acid (ASA) and clopidogrel, as well as those aged < 18 years. The study was approved by the local and national ethics committees (CAAE. 0153.0.004.000-09).

Patients used a loading dose of clopidogrel of 300 mg six to 12 hours before the procedure. The use of clopidogrel continued for at least 30 days after the PCI. In cases where drug-eluting stents (DES) were used, the use of clopidogrel continued for at least 12 months.[8] Baseline clinical and demographic characteristics are shown as means and standard deviations for continuous variables and as percentages for discrete variables.

At the follow-up visits after 30 days, three months, six months, and 12 months, medication prescriptions and risk factor control were evaluated. The three-month follow-up could be cancelled at the discretion of the attending physician in cases of less complexity. If there was loss to follow-up, a telephone contact was made to substitute the 12-month consultation. Loss to follow-up was defined as patients who could not be contacted at the last consultation, either in person or by phone.

Data regarding the presence of factors risk for atherosclerosis (systemic arterial hypertension, dyslipidemia, dysglycemia, and smoking) and changes in prescription to control these risk factors were obtained during follow-up visits at specific outpatient clinics for patients treated with PCI at the institution. For secondary prevention, the BP goal was defined as systemic blood pressure < 130/80 mmHg;[9] glycemic goal was defined as fasting glucose < 140 mg/dL and glycated