

STENT COM REVESTIMENTO DE CARBONO E O PAPEL DO SISTEMA CALICREÍNA-CININA NA ANGIOPLASTIA PERIFÉRICA

Abstrato

Objetivo: O objetivo deste estudo foi investigar a evolução clínica dos pacientes tratados com stent revestido de carbono, sua perviedade e a resposta inflamatória desencadeada por esse processo através da quantificação dos elementos séricos do sistema calicreína-cinina (SCC).

Métodos: Estudo prospectivo de centro único com 27 pacientes com doença arterial periférica (DAP) que necessitaram de angioplastia transluminal percutânea e implante de stent do segmento ilíaco-femoropoplíteo usando stents revestidos de carbono (Carbostents). As concentrações sanguíneas das frações total e cininogênio foram avaliadas por métodos imunoenzimáticos. Os níveis de calicreína plasmática foram avaliados pelo método colorimétrico e os níveis de calicreína tecidual foram avaliados pelo método espectrofotométrico. A atividade da cininase II foi medida por análise fluorométrica.

Resultados: Dos 27 pacientes que completaram os 6 meses do estudo (11 território ilíaco, 16 território femoropoplíteo), apenas um apresentou reestenose (3,7%) (segmento femoropoplíteo) e nenhum paciente apresentou oclusão (96,3% de permeabilidade). Em um ano, quatro pacientes foram perdidos no seguimento e todos os 23 pacientes avaliados mantiveram a perviedade do stent, exceto o paciente que teve reestenose nos primeiros 6 meses. Relatamos o resgate completo (100%) dos membros em 12 meses de acompanhamento. Os níveis de atividade de cininógenos de alto e baixo peso molecular diminuíram significativamente ao longo do tempo (antes vs. 24 h, $p < 0,01$; antes vs. 6 meses, $p < 0,001$ e antes vs. 24 h, $p < 0,01$; antes vs. 6 meses, $p < 0,001$; 24 h vs. 6 meses, $p < 0,001$, respectivamente). Os pacientes também apresentaram níveis significativamente mais baixos de calicreína plasmática e tecidual (antes vs. 24 h, $p < 0,001$; antes vs. 6 meses, $p < 0,001$ e antes vs. 24 h, $p < 0,01$; antes vs. 6 meses, $p < 0,05$, respectivamente). Houve um aumento significativo na atividade enzimática da cininase II às 24 horas e após 6 meses em comparação ao controle pré-tratamento ($p < 0,001$).

Conclusão: Nossa experiência inicial mostra que o uso de stents revestidos de carbono na DAP parece ser seguro, com baixas taxas de reestenose precoce (3,7% nos primeiros 6 meses e 5% nos 12 meses de acompanhamento). Concluimos que o SCC estava envolvido na resposta inflamatória causada pela colocação de stents revestidos de carbono.

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CARBON-COATED STENT AND THE ROLE OF THE KALLIKREIN-KININ SYSTEM IN PERIPHERAL ANGIOPLASTY

Abstract

Objective: The purpose of this study was to investigate the clinical evolution of patients treated with carbon-coated stent, as well as its patency and the inflammatory response triggered by this process through the quantification of serum elements of the kallikrein-kinin system (KKS).

Methods: This was a single-center prospective study with 27 patients with peripheral artery disease (PAD) who required percutaneous transluminal angioplasty and stenting of the iliofemoropopliteal segment using carbon-coated stent grafts (carbostents). The blood concentrations of the total and kininogen fractions were evaluated using immunoenzymatic methods. Plasma kallikrein levels were assessed by the colorimetric method and tissue kallikrein levels were evaluated by the spectrophotometric method. The activity of kininase II was measured by fluorometric analysis.

Results: Of the 27 patients who completed the 6 months of the study (11 iliac territory, 16 femoropopliteal territory), only one experienced restenosis (3.7%) (femoropopliteal segment) and no patient had occlusion (96.3% of patency). In 1 year, four patients were lost to follow-up and all 23 patients evaluated maintained stent patency, except for the patient who had restenosis throughout the first 6 months. We report complete (100%) member salvage in 12 months of follow-up. The activity levels of high- and low-molecular-weight kininogens decreased significantly over time (before vs. 24 h, $p < 0.01$; before vs. 6 months, $p < 0.001$, and before vs. 24 h, $p < 0.01$; before vs. 6 months, $p < 0.001$; 24 h vs. 6 months, $p < 0.001$, respectively). Patients also had significantly lower levels of plasma and tissue kallikrein (before vs. 24 h, $p < 0.001$; before vs. 6 months, $p < 0.001$, and before vs. 24 h, $p < 0.01$; before vs. 6 months, $p < 0.05$, respectively). There was a significant increase in the enzymatic activity of kininase II at 24 h and after 6 months compared to the pre-treatment control ($p < 0.001$).

Conclusion: Our early experience shows that the use of carbon-coated stents in PAD appears to be safe, with low rates of early restenosis (3.7% in the first 6 months and 5% in the 12 months of follow-up). We concluded that KKS was involved in the inflammatory response caused by the placement of carbon-coated stents.

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