



# ANGIOLOGIA E CIRURGIA VASCULAR

www.elsevier.pt/acv



## ORIGINAL ARTICLE

### Post-implantation syndrome – retrospective analysis of 52 patients



Vítor Ferreira\*, Rui Machado, Joana Martins, Luís Loureiro, Tiago Loureiro, Lisa Borges, Diogo Silveira, Sérgio Teixeira, Duarte Rego, João Gonçalves, Gabriela Teixeira, Inês Antunes, Rui Almeida

Serviço de Angiologia e Cirurgia Vascular – Hospital de Santo António, Centro Hospitalar do Porto, Portugal

Received 31 May 2015; accepted 29 September 2015

Available online 14 November 2015

#### KEYWORDS

EVAR;  
Abdominal aortic aneurysm;  
Post-implantation syndrome

#### Abstract

**Introduction:** A systemic inflammatory response is common after EVAR. Its clinical impact is unknown, and although it is usually well tolerated, there is concern it might be associated with increased morbidity and mortality in high risk patients. This study aims to evaluate the occurrence of the post-implantation syndrome (PIS) in patients undergoing EVAR, its characteristics and clinical significance.

**Methods:** This study is a retrospective observational analysis of patients undergoing elective EVAR between November 2012 and November 2014. PIS was defined by fever ( $>38^{\circ}\text{C}$ ) and leukocytosis ( $>12,000\ \mu\text{L}^{-1}$ ), excluding infectious complications. We evaluated the epidemiological characteristics of the patient, aneurysm and procedure characteristics and their relationship with development of PIS.

**Results:** Fifty-two patients were included, and 21.2% were diagnosed with PIS. The ePTFE grafts were not associated with the occurrence of the syndrome, in contrast with polyester stent grafts (0% vs. 28.2%,  $p=0.031$ ). The age and gender of patients, the diameter of the aneurysm, duration and radiation dose and the configuration of the stent graft (aorto-bi-iliac, aorto-uni-iliac or fenestrated) were not associated with PIS. There was no statistically significant difference in the occurrence of major cardiovascular events during hospitalization in both groups.

**Conclusion:** The inflammatory syndrome after EVAR occurs in a significant percentage of patients (21%). Stent grafts constructed by polyester are a significant risk factor. Despite the exuberant inflammatory response, it was not associated with increased occurrence of cardiovascular events, and it is usually benign, well tolerated and self-limiting.

© 2015 Sociedade Portuguesa de Angiologia e Cirurgia Vascular. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

\* Corresponding author.

E-mail address: [vitormiguelferreira@hotmail.com](mailto:vitormiguelferreira@hotmail.com) (V. Ferreira).

**PALAVRAS-CHAVE**

EVAR;  
Aneurisma aorta  
abdominal;  
Síndrome  
inflamatórias  
após EVAR

**Síndrome inflamatória pós-EVAR – análise retrospectiva de 52 doentes tratados****Resumo**

**Introdução:** É frequente uma resposta inflamatória sistémica após EVAR. O seu impacto clínico é desconhecido, e apesar de habitualmente ser bem tolerado existe o receio de estar associado a maior morbi-mortalidade em doentes de alto risco. Este estudo tem como objectivo a avaliação da ocorrência do síndrome pós-implantação (SPI) nos doentes submetidos a EVAR, suas características e relevância clínica.

**Material e métodos:** Estudo observacional retrospectivo de doentes submetidos a EVAR electivo entre Novembro de 2012 e Novembro de 2014. O SPI foi definido por febre ( $>38^{\circ}\text{C}$ ) e leucocitose ( $>12.000/\mu\text{L}$ ), excluídas complicações infecciosas. O outcome primário foi o diagnóstico de SPI. Foram avaliadas as características epidemiológicas do doente, características do aneurisma e do procedimento e sua relação com o SPI.

**Resultados:** Foram incluídos 52 doentes, dos quais 21,2% desenvolveram SPI. As endopróteses de ePTFE não foram associadas à ocorrência de SPI, comparativamente às de poliéster (0% vs. 28,2%,  $p=0.031$ ). A idade e o sexo dos pacientes, o diâmetro do aneurisma, o tempo e a dose de radiação e a configuração da endoprótese (aorto-bi-iliaca, aorto-uni-iliaca ou fenestrada) não foram associados à ocorrência do síndrome. Não se observaram diferenças estatisticamente significativas na ocorrência de eventos cardiovasculares maior durante o internamento em ambos os grupos.

**Conclusão:** O SPI ocorre numa percentagem significativa de doentes (21%). As endopróteses construídas com poliéster são um factor de risco significativo. Apesar da resposta inflamatória exuberante, esta não se associou à ocorrência de eventos cardiovasculares, sendo habitualmente benigna, bem tolerada e auto-limitada.

© 2015 Sociedade Portuguesa de Angiologia e Cirurgia Vascular. Publicado por Elsevier España, S.L.U. Este é um artigo Open Access sob a licença de CC BY-NC-ND (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

**Introduction**

After implantation of a stent graft in endovascular repair of abdominal aortic aneurysm (EVAR) it is common a systemic inflammatory response, which sometimes is exuberant. The inflammatory syndrome after EVAR, or post-implantation syndrome (PIS), is defined by fever and leukocytosis in the postoperative period when infectious complications are excluded.<sup>1,2</sup> Despite being described since 1999,<sup>2</sup> the etiologic mechanisms, its significance and its consequences are yet not fully understood. The incidence differs in the published studies, in part due to different diagnostic criteria, and it is estimated from 14% to 60%.<sup>1-6</sup> The inflammatory reaction is attributed to endothelial dysfunction in contact with the graft material.<sup>7</sup> Acute thrombus formation in the aneurysmal sac may also contribute.<sup>7</sup> The clinical impact of this inflammatory response is unknown, and although it is usually well tolerated and self-limiting and there is concern that it could be associated with worse prognosis and higher morbidity and mortality in high cardiovascular risk patients. The necessity of treatment and the most appropriate type of treatment remains controversial.

This study aims to evaluate the occurrence of post-implantation syndrome in our patients submitted to elective endovascular repair of abdominal aortic aneurysm, its characteristics and its clinical significance.

**Materials and methods**

This study is a retrospective observational analysis of the abdominal aortic aneurysms treated by elective

EVAR between November of 2012 and November of 2014. All patients undergoing EVAR consecutively were included. Infectious aneurysms, ruptured aneurysms and false aneurysms were excluded from the analysis. We proceed to systematically review the electronic clinical records, with evaluation of the epidemiological characteristics of patients (age and gender), auricular temperature and analytical parameters (erythrocytes, leukocytes, platelets, c reactive protein (CRP)), before and after the procedure. The temperature evaluation was performed on the patient admission to the hospital, and after that, at every standard ward shift (every 6 h). Analytical blood evaluation was performed at patient's admission to the hospital, on the first postoperative day, and after that, at variable timing, by decision of the treating physician. Aneurysm features (diameter, location), characteristics of stent graft (configuration of the endoprosthesis (aorto-uni-iliac, aorto-bi-iliac, fEVAR), manufacturer, model and construction material) and the procedure approach used (percutaneous or surgical cutdown femoral access) were also registered. The radiation dose, the fluoroscopy time of the intervention and the length of stay (total hospital stay and on intermediate care unit) were analyzed. Major complications and the occurrence of cardiovascular events (myocardial ischemia with EKG signs or symptomatic elevation of myocardial ischemia markers or acute cerebrovascular events) in the postoperative period were also recorded.

The post-implantation syndrome was defined by the presence of leukocytosis ( $>12,000$  leukocytes/ $\mu\text{L}$ ) plus the occurrence of fever ( $>38^{\circ}\text{C}$  – auricular temperature) during the postoperative period when infectious complications

Download English Version:

<https://daneshyari.com/en/article/2868263>

Download Persian Version:

<https://daneshyari.com/article/2868263>

[Daneshyari.com](https://daneshyari.com)