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ORIGINAL ARTICLE

Cost-effectiveness of the endovascular repair of Abdominal Aortic Aneurysm in Portugal

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KEYWORDS

Cost-effectiveness;
Abdominal aortic
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Abstract

Endovascular Aneurysm Repair (EVAR) for the treatment of aortic abdominal aneurysm has been shown to improve short-term survival and quality of life as compared to Open Repair (OR), while reducing the rate of serious complications and allowing for the treatment of more patients.

Objectives: To examine the cost-effectiveness of EVAR compared to OR in the treatment of aortic abdominal aneurysm in the Portuguese context using a model previously developed in the UK.

Methodology: We adapted an international economic evaluation model to the Portuguese situation, assuming that the health benefits of EVAR observed in clinical trials would also apply to Portuguese patients. We carried out an expert panel survey to calculate the resource use associated with the intervention and its short and long-term consequences, valued with Portuguese prices.

Results: The major cost difference in the primary intervention (difference of 3,064 € in favor of OR) is related to the cost of the endograft/graft. No major differences are observed in the total cost of complications and re-interventions between the two procedures. EVAR represents a cost of 16,709 € over lifetime compared to 12,130 € for OR. Using data from the literature

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we show that EVAR allows for 0.17 additional undiscounted years of life and 0.091 additional undiscounted quality-adjusted life years. The incremental cost-effectiveness ratio (ICER) of EVAR is of 65,605 €/QALY.

Conclusion: Endovascular repair of aortic abdominal aneurysm represents an effective alternative and has been used increasingly in Portugal and elsewhere. Our study shows that its cost-effectiveness is currently above the commonly accepted threshold in Portugal, but that the economic value of EVAR would greatly improve if benefits were confirmed in the long run after the intervention. Under these circumstances, EVAR would become an economically valuable intervention that could be adopted on a large scale in Portugal.

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PALAVRAS-CHAVE

Avaliação
Custo-efetividade;
Aneurisma da aorta
abdominal;
Tratamento
endovascular;
Cirurgia convencional

Custo-efetividade no tratamento do aneurisma da aorta abdominal: uma abordagem no contexto Português

Resumo

O tratamento endovascular (EVAR) do aneurisma da aorta abdominal tem sido apontado, nos últimos anos, como uma alternativa bastante atrativa à cirurgia convencional. Não obstante tais benefícios clínicos e percebidos pelos doentes, os estudos de avaliação económica parecem não ser tão consistentes, o que requer algumas considerações aquando da utilização desta opção terapêutica em larga escala.

Objetivos: Avaliar, no contexto Português, o custo-efetividade do EVAR no tratamento do aneurisma da aorta abdominal comparado com o tratamento por cirurgia convencional, usando um modelo desenvolvido previamente no Reino Unido.

Metodologia: Os benefícios foram baseados em estudos clínicos internacionais, assumindo que tais resultados podem ser aplicados ao contexto Português. Constituiu-se um painel de peritos para apurar a utilização de recursos associados à intervenção bem como as consequências a curto e médio prazo (valorizados com preços de Portugal).

Resultados: A diferença de custos na intervenção primária entre o EVAR e o tratamento por cirurgia convencional, deveu-se ao preço da endoprótese. Não se verificaram diferenças, entre ambos os procedimentos, no que respeita ao custo total associado às complicações e reintervenções. O rácio custo-efetividade incremental (ICER) do EVAR foi de 65,605€/QALY.

Conclusões: O tratamento endovascular do aneurisma da aorta abdominal apresenta resultados que parecem comprovar uma elevada efetividade tendo sido utilizada, nos últimos anos, de forma crescente um pouco por todo o mundo. Apesar dos resultados custo-efetividade, aqui apurados, estarem acima do que é considerado limiar de aceitação em Portugal, o valor económico do EVAR melhoraria se se confirmassem os benefícios a longo prazo que, alguns dos estudos recentes, parecem apontar. Nessas circunstâncias, o tratamento endovascular tornar-se-ia uma intervenção economicamente interessante que, aliada aos bons resultados ao nível da efetividade e da qualidade de vida dos doentes, poderia ser indicada para um maior número de situações clínicas.

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Introduction

Abdominal aortic aneurysm (AAA) is a serious health condition with a high mortality risk in developed countries. For example, in Canada AAA is the 10th leading cause of death in men 65 years or older.¹ The risk of AAA rupture is low, but it increases with the increasing diameter of the aneurysm. In case of AAA rupture mortality is very high, e.g., it has been estimated to vary between 85% to 95% in the Netherlands.²⁻⁴ As aneurysms commonly remain asymptomatic until they rupture, a close surveillance of the diameter is needed. Elective abdominal aneurysm repair is usually indicated for aneurysms with a

diameter greater than 5.5 cm.^{1,5} Mortality in case of elective aneurysm repair is by contrast lower, below 5%.⁶⁻⁹

Over the past 15 or 20 years the treatment of AAA has changed considerably. Traditionally AAA has been treated through conventional Open Surgical Repair (OR), which is a major but generally successful procedure, with established and definite mortality risk and complication rate, although its long-term re-intervention rates are often underestimated. However, the Endovascular Aneurysm Repair (EVAR) has increased over the recent years as a substitute for OR. It is a minimally invasive alternative to OR, first performed by Volodos in Kharkov, Ukraine and published in 1986.⁵ Since EVAR is less invasive compared to conventional OR, it

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