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SCIENTIFIC ARTICLE

Impact of postoperative cognitive decline in quality of life: a prospective study

Joana Borges[a], **Joana Moreira**[a], **Adriano Moreira**[a], **Alice Santos**[a], **Fernando J. Abelha**[a,b,*]

[a] *Centro Hospitalar de São João, Serviço de Anestesiologia, Porto, Portugal*
[b] *Faculdade de Medicina da Universidade do Porto, Departamento de Cirurgia, Unidade de Anestesiologia e Medicina Perioperatória, Porto, Portugal*

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KEYWORDS
Postoperative care;
Postoperative cognitive decline;
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Abstract
Background: Regardless the progress in perioperative care postoperative cognitive decline (PCD) has been accepted unequivocally as a significant and frequent complication of surgery in older patients. The aim of this study was to evaluate the incidence of postoperative cognitive decline and its influence on quality of life three months after surgery.
Methods: Observational, prospective study in a Post-Anesthesia Care Unit (PACU) in patients aged above 45 years, after elective major surgery. Cognitive function was assessed with Montreal Cognitive Assessment (MOCA); Quality of life (QoL) was assessed using SF-36 Health Survey (SF-36). Assessments were performed preoperatively (T0) and 3 months after surgery (T3).
Results: Forty-one patients were studied. The incidence of PCD 3 months after surgery was 24%. At T3 MOCA scores were lower in patients with PCD (median 20 vs. 25, $p = 0.009$). When comparing the median scores for each of SF-36 domains, there were no differences between patients with and without PCD. In patients with PCD, and comparing each of SF-36 domains obtained before and three months after surgery, had similar scores for every of the 8 SF-36 areas while patients without PCD had better scores for six domains. At T3 patients with PCD presented with higher levels of dependency in personal activities of daily living (ADL).
Conclusion: Three months after surgery patients without PCD had significant improvement in MOCA scores. Patients with PCD obtained no increase in SF-36 scores but patients without PCD improved in almost all SF-36 domains. Patients with PCD presented higher rates of dependency in personal ADL after surgery.

* Corresponding author.
E-mail: fernando.abelha@gmail.com (F.J. Abelha).

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PALAVRAS-CHAVE
Cuidado pós-operatório;
Declínio cognitivo no pós-operatório;
Qualidade de vida

Impacto do declínio cognitivo após cirurgia sobre a qualidade de vida: estudo prospectivo

Resumo
Justificativa e objetivo: Independente do progresso do tratamento no período perioperatório, o declínio cognitivo no pós-operatório (DCPO) é inequivocamente aceito como uma complicação importante e frequente da cirurgia em pacientes mais velhos. O objetivo deste estudo foi avaliar a incidência de DCPO e sua influência na qualidade de vida três meses após a cirurgia.
Métodos: Estudo prospectivo observacional conduzido em Sala de Recuperação Pós-anestesia (SRPA) com pacientes de idade superior a 45 anos, após cirurgia eletiva de grande porte. A função cognitiva foi avaliada com o teste de Avaliação Cognitiva de Montreal (MOCA) e a qualidade de vida (QV) com o Questionário sobre Qualidade de Vida (SF-36). As avaliações foram realizadas no pré-operatório (T0) e três meses após a cirurgia (T3).
Resultados: Quarenta e um pacientes foram avaliados. A incidência de DCPO três meses após a cirurgia foi de 24%. Em T3, os escores MOCA foram menores nos pacientes com DCPO (mediana 20 *vs.* 25, $p = 0{,}009$). Ao comparar as medianas dos escores para cada um dos domínios do SF-36, não observamos diferenças entre os pacientes com e sem DCPO. Ao comparar cada um dos domínios do SF-36 obtidos antes e após três meses de cirurgia, os pacientes com DCPO apresentaram resultados semelhantes para cada uma das oito áreas do SF-36, enquanto pacientes sem DCPO apresentaram resultados melhores em seis domínios. Em T3, os pacientes com DCPO apresentaram níveis mais elevados de dependência na realização de atividades cotidianas.
Conclusão: Três meses após a cirurgia, os pacientes sem DCPO apresentaram melhora significativa dos escores MOCA. Os pacientes com DCPO não apresentaram aumento dos escores SF-36, mas os pacientes sem DCPO apresentaram melhora em quase todos os domínios do SF-36. Os pacientes com DCPO apresentaram taxas mais elevadas de dependência na realização de atividades cotidianas após a cirurgia.

Introduction

Regardless the progress in perioperative care, postoperative cognitive decline (PCD) has been accepted unequivocally as a significant and frequent complication of surgery in older patients.[1–12] However, there is still no consensus definition of PCD in the medical community, and broadly, it refers to a temporary decline in cognition associated with surgery.[13] If it last longer than three months is defined as long-term postoperative cognitive decline,[13,14] and a considerable proportion of patients do not recover three months after surgery (73–69% in cardiac surgery).[15]

The exact etiology of PCD remains unclear and is probably multifactorial.[15,16] Complications in the perioperative period may anticipate early PCD, but increasing age has been shown to be a significant and independent risk factor for PCD. The incidence of PCD is expected to increase as the population of older surgical patients grows.[11,17]

Patients submitted to cardiac surgery have been profusely studied, however, the incidence and prevalence of this complication after other types of surgery has not been so exhaustively reported.[16,18] The International Study of Postoperative Cognitive Dysfunction (ISPOCD) group studied 1218 patients aged 60 years old or older, undergoing major general surgery and reported an incidence of PCD of 25.8–9.9%, one week and three months following surgery, respectively.[6] However, the estimation of the frequency of PCD still varies from 25% to 80%.[4]

The diagnosis of PCD requires valid and accurate preoperative and postoperative neuropsychological testing and the determination of a cut-off point between PCD and normal variation in cognitive performance. PCD diagnosis is not easy to perform and it has no apparent clinical symptoms – patients may present an impairment in one or various cognitive abilities such as memory, attention, concentration, speed of motor and mental response, information processing and learn after surgery and anesthesia that is different from delirium.[4,13,19] It has a subtle manner of manifestation, commonly many days or weeks after surgery.[2,4] Numerous clinicians fail to recognize the subject's cognitive decline following surgery; but also the patients themselves, due to inattention or embarrassment, may not be aware of their PCD or be reluctant to report any alteration.[4] Until now, there is no standard accepted approach for its diagnosis, and it is essential use several valid and highly sensitive neuropsychological tests, which allow assessing many cognitive areas.[4,19–21]

Although cognitive changes are not manifested clinically in some patients, recent studies show that PCD may lead to a prolonged hospital stay, elevated medical costs, increased morbidity and readmission to hospital. PCD has long-term consequences in terms of increased all-cause mortality and declined in Quality of Life (QoL), associated with impairments in daily functioning, premature departure from the labor market, and dependency on economic assistance after hospital discharge.[2,8,9]

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