

# 預測不停跳冠狀動脈繞道手術醫療費用

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## 摘要

近二十年來,心臟手術病例組合的重大演變,已經從死亡發生的危險移轉至併發症發生的風險,這種趨勢的變化意味著施行此類手術的病患之臨床特性比以往有較多的高齡病患、更急性的及較多的合併症。雖然術後病人存活率增加,但併發症卻增多了,以致使醫療耗用也相形增加。本研究應用 EuroScore 風險評估系統分析預測不停跳冠狀動脈繞道手術之直接醫療費用。研究對象為北部某醫學中心 2002 年 11 月 1 日至 2003 年 6 月 30 日期間之施行不停跳冠狀動脈繞道手術的病患,以病歷審查收集 EuroScore 所需資料並計算其分數,以線性迴歸分析 Euroscore 中各獨立危險因子與直接醫療費用的關係。結果在 364 位施行不停跳冠狀動脈繞道手術的病人平均年齡是  $65\pm 10$  歲;男性佔多數(男性:278 人 76.37%;女性:86 人 23.63%)他們的 EuroScore 平均分數是  $6.80\pm 0.23$ ;平均總住院日數為  $18\pm 10$ ;EuroScore 與住院醫日數呈顯著正相關, $R^2=0.55(p<0.001)$ ;EuroScore 風險比分愈高則總醫療費用越高,EuroScore 與總醫療費用之線性回歸分析,其預估值為  $\log(\text{總醫療費用醫療成本}) = 12.2836\pm 0.0466(\text{EuroScore})$ , $R^2=32.63\%(p<0.001)$ ,即是 EuroScore 每增加一分則總醫療費用增加 0.3%。結論: EuroScore 是一個簡單有效的臨床風險評估模式在預測不停跳冠狀動脈繞道手術直接醫療費用具有統計上顯著意義,其結果可作為臨床決策的參攷、醫療機構間疾病嚴重度的比較與溝通和臨床行政總醫師或主治醫師安排病人手術治療排程之依據。

## Abstract

Objective: In the last two decades evolutions of case-mix in heart surgery from mortality risk to complication risk has been observed in many centers. In spite of the increase in survival rate, an increase of the incidence of postoperative complications led to longer stay and more cost in medical issue. The aim of this study is apply additive EuroScore risk stratification model predict direct medical costs. Methods: 364 consecutive beating heart coronary artery bypass graft surgery between November 2001 and June 2003 were enrolled with the additive EuroScore risk model. Direct costs variable were retrospectively collected. The multivariate analysis was used to find independently associated with total direct costs. Result: The study included 364 beating heart coronary artery bypass-only operations. The average age was  $65\pm 10$  years (range 40 to 88 years). most patients were men (76% versus 24%). The crude in hospital mortality was 3.75%, average EuroScore was  $6.80\pm 0.23$ . The mean total length of stay was  $18\pm 10$ . According to EuroScore 61 patients (16.14%) were at low risk, 126 (33.3%) at medium, and 191 (50.53%) at high risk. Costs were significantly and correlation with length of stay  $R^2=0.55$

( $P < 0.001$ ); and costs were also significantly and correlation with EuroScore risk with  $R^2 = 0.55$  ( $P < 0.001$ ) and an increase of each single EuroScore risk score then the total direct costs increases 0.3%. Conclusions: In this study, we can demonstrate EuroScore can be applied in beating heart coronary bypass as well as the conventional coronary artery bypass. The EuroScore risk algorithm had a statistics significantly power to predict beating heart coronary artery bypass-only direct costs.