[1]赵文波,李明,唐骅,等.应用分类树模型构建糖尿病肾病蛋白尿进展的风险预测模型[J].第三军医大学学报,2013,35(11):1144-1147.
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应用分类树模型构建糖尿病肾病蛋白尿进展的风险预到：

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Title: Construction of a risk prediction model for proteinuria progression in diabetic nephropathy by classification tree

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关键词: 糖尿病肾脏疾病; 分类树; 危险因素; 预测模型

Keywords: diabetic nephropathy; classification tree; risk factors; prediction model

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摘要: 目的 应用分类树模型构建糖尿病肾病由微量蛋白尿到大量蛋白尿进展风险的预测模型，并评价其应用价值。 方法 选取本院临床资料完善的糖尿病肾病住院患者256例，根据GFR分期及尿白蛋白定量诊断分为糖尿病微量蛋白尿组（183例）和糖尿病大量蛋白尿组（73例）。记录患者的相关临床资料，采用Exhaustive CHAID分类树算法建立糖尿病肾病进展风险的预测模型，采用错分概率Risk值、索引图评价模型的应用价值。 结果 所建立的分类树模型包括3层，共11个结点，共筛选出4个解释变量：胱抑素水平、高血压病程、腰臀比、白蛋白水平；其中最为重要的预测因素为血清胱抑素水平和腰臀比水平。模型错分概率Risk值为0.141，模型拟合的效果较好。 结论 分类树模型不仅能有效地拟合糖尿病肾病由微量蛋白尿向大量蛋白尿进展的风险预测，还可以有效地筛选变量间的交互作用效应。

Abstract: Objective To establish a risk prediction model for progression of microalbuminuria to proteinuria in diabetic nephropathy, and to evaluate its value for type 2 diabetes patients with early renal damage. Methods Totally 256 patients with confirmed type 2 diabetes who were inpatients or outpatients in our hospital from January to June 2012 were enrolled in this study. According to estimated glomerular filtration rate (eGFR) installments and urine albumin quantitative analysis, they were divided into proteinuria group (*n*=73) and early diabetic kidney damage group (*n*=183). The clinical data of the

patients were recorded to analyze the main factors for the progression of diabetic nephropathy using the Exhaustive CHAID classification tree algorithm. The value of the established model was evaluated by the Risk statistics and index map. Results The model had 3 stratum and 11 nodes. There were 4 explanatory variables screened out in the model, that is, CysC level, history of hypertension, waist-hip ratio and albumin level. The most important risk factors were CysC level and waist-hip ratio. The risk value of misclassification probability of the model was 0.141, and the classification tree model fitted the actuality very well. Conclusion Classification tree model can not only properly predict the progression of microalbuminuria to proteinuria in diabetic nephropathy, but also reveal the complex interaction effects among the factors.

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