

肾福康胶囊治疗慢性肾脏病疗效的影响因素分析及预测模型建立[△]

唐莉^{1*}, 秦梦圆², 杨玉芳², 邹小琴³, 梁志伟¹, 钟小斌^{1#} (1. 广西医科大学附属肿瘤医院药学部, 南宁 530012; 2. 广西医科大学第一附属医院药学部, 南宁 530021; 3. 广西医科大学第一附属医院科研部, 南宁 530021)

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摘要 **目的** 探索肾福康胶囊治疗慢性肾脏病(CKD)疗效的影响因素,建立预测肾福康胶囊疗效的列线图预测模型。**方法** 选取2019年7月至2022年8月在广西医科大学第一附属医院住院并接受肾福康胶囊治疗的CKD患者为研究对象,从医院电子病历系统中收集患者临床资料,根据疗效结果分为有效组和无效组。采用Lasso-Logistic多因素回归分析筛选肾福康胶囊疗效的影响因素;以肾福康胶囊治疗有效为预测结局,以筛选获得的影响因素为预测变量,应用R软件构建列线图预测模型。将所有患者随机分为训练集与验证集,采用受试者操作特征曲线、校准曲线、临床决策曲线分别评价模型的区分度、校准度及临床净收益。**结果** Lasso-Logistic回归分析结果显示,合并糖尿病,血尿素氮、甘油三酯、血磷水平降低,凝血酶原时间延长,载脂蛋白AⅠ水平升高是肾福康胶囊治疗CKD疗效降低的影响因素。列线图预测模型评价结果显示,训练集和验证集的曲线下面积分别为0.745、0.797,二者数值接近且均高于0.70,表明该模型预测性能稳定;两组数据集的校准曲线拟合度较好,表明该模型校准性能良好;临床决策曲线位于两条极端参考线之上,表明该模型有较高的临床净收益。**结论** 糖尿病、血尿素氮、甘油三酯、载脂蛋白AⅠ、血磷、凝血酶原时间是肾福康胶囊治疗CKD疗效的影响因素。本研究所建立的列线图预测模型可为临床合理应用肾福康胶囊以及提高其治疗CKD的疗效提供依据。

关键词 肾福康胶囊;慢性肾脏病;影响因素;预测模型;列线图

Analysis of influencing factors affecting the efficacy of Shenfukang capsule in the treatment of chronic kidney disease and construction of prediction model

TANG Li¹, QIN Mengyuan², YANG Yufang², ZOU Xiaoqin³, LIANG Zhiwei¹, ZHONG Xiaobin¹ (1. Dept. of Pharmacy, Guangxi Medical University Cancer Hospital, Nanning 530012, China; 2. Dept. of Pharmacy, The First Affiliated Hospital of Guangxi Medical University, Nanning 530021, China; 3. Dept. of Scientific Research, The First Affiliated Hospital of Guangxi Medical University, Nanning 530021, China)

ABSTRACT **OBJECTIVE** To explore the influencing factors of Shenfukang capsule in the treatment of chronic kidney disease (CKD) and construct a nomogram prediction model for evaluating its therapeutic efficacy. **METHODS** CKD patients who were hospitalized from July 2019 to August 2022 in the First Affiliated Hospital of Guangxi Medical University and treated with Shenfukang capsule were selected as study subjects. Clinical data of the patients were collected from the hospital's electronic medical record system, and they were divided into an effective group and an ineffective group based on treatment outcomes. Lasso-Logistic multivariate regression analysis was used to screen the influencing factors of the efficacy of Shenfukang capsule. Using the effectiveness of Shenfukang capsule treatment as the prediction outcome and the screened influencing factors as predictor variables, a nomogram prediction model was constructed using R software. All patients were randomly divided into a training cohort and a validation cohort. The discriminative ability, calibration, and clinical net benefit of the model were evaluated using the receiver operating characteristic (ROC) curve, calibration curve, and decision curve analysis, respectively. **RESULTS** Lasso-Logistic regression analysis revealed that concurrent diabetes mellitus, decreased levels of blood urea nitrogen, triglycerides, and serum phosphorus, as well as prolonged prothrombin time and elevated apolipoprotein AⅠ levels, were influencing factors for reduced efficacy of Shenfukang capsule in CKD treatment. The evaluation results of the nomogram prediction model showed that the area under curve values were 0.745 and 0.797 in the training and validation cohorts, respectively, which were close and both exceeded 0.70, indicating stable predictive performance. The calibration curves demonstrated good agreement in both datasets, suggesting satisfactory calibration performance. The clinical decision curves were positioned above the two extreme reference lines, indicating high clinical benefit of the model. **CONCLUSIONS** Diabetes mellitus, blood urea nitrogen, triglycerides, apolipoprotein AⅠ, serum phosphorus, and prothrombin time were factors associated with the efficacy of Shenfukang

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* 第一作者 药师,硕士。研究方向:中药治疗肾脏病的临床研究。
E-mail:1575825377@qq.com

通信作者 主任药师,硕士生导师。研究方向:中药防治肾脏病的作用与机制。E-mail:zhongxiaobin@gxmu.edu.cn