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生物药剂学与药物动力学

盐酸文拉法辛大鼠在体肠吸收特性考察

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摘要
目的 研究盐酸文拉法辛大鼠在体肠吸收特性，为制剂设计提供生物药剂学依据。方法 采用大鼠在体肠单向灌流技术，从吸收部位、药物质量浓度、灌流速度3方面对盐酸文拉法辛的各肠段吸收特性进行考察；对用质量法和酚红法计算的净水流量值(FNW)、药物吸收速率常数(ka)和药物表观吸收系数(Papp)进行比较。结果 各肠段间的ka和Papp值无显著性差异(P＞0.05)；药物质量浓度对ka和Papp影响无显著性差异(P＞0.05)；灌流速度对ka和Papp值的影响非常显著 (P＜0.01)；质量法计算所得的FNW、ka、Papp值都略高于酚红法。结论 盐酸文拉法辛大鼠肠吸收机制为被动扩散，其吸收符合一级动力学特征，适于制备日服1次缓控释给药系统；质量法避免了加入标示物给实验带来的误差等问题，可以作为大鼠单向灌流在体肠吸收实验中校正灌流液体积的有效方法。

关键词 药剂学 肠吸收 单向灌流法 盐酸文拉法辛 被动扩散

分类号 R94

Intestinal absorption mechanism of venlafaxine hydrochloride in rats

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Abstract

Objective To investigate the in situ intestinal absorption property of venlafaxine hydrochloride in rats. Methods The absorption kinetics of venlafaxine hydrochloride at different segment s of intestine, drug concentration and perfusion flow rate were studied by means of single perfusion technique; The values of net water flux(FNW),drug absorption rate constant (ka) and drug apparent intestinal permeability(Papp)by the gravimetry were compared with that by phenol red assay. Results Different regions of intestinal and drug concentration had few effect on ka and Papp(P＞0.05); perfusion flow rate could significantly affect ka and Papp(P＜0.01).The values of FNW, ka and Papp by the gravimetry were slightly higher than that by the phenol red assay. Conclusions The gravimetry may significantly correct the perfusion volume in the rat single-pass intestinal perfusion technique, which prevents the results from the systematic errors due to the addition of an external nonabsorbed marker. The absorption of venlafaxine hydrochloride complies with the passive transport mechanism. Venlafaxine hydrochloride is suitable to be prepared as sustained-release (or controlled-release) dosage forms which can be administered once a day.

Key words pharmaceutics intestinal absorption single-pass perfusion venlafaxine hydrochloride passive diffusion

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