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论文

血压变化的定量比较——“净升、降压面积百分比”

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摘要:

本文综合升、降压强度,升、降压时间及原血压水平等因素,建议用“净升、降压面积百分比”,以求合理、明确、简便、定量地比较血压变化的结果.尤其是在篩药时,便于迅速比较多种药物的作用。设原血压水平与基线0毫米汞柱间的面积为S,原血压水平与降压曲线间的面积为S',原血压水平与升压曲线间的面积为S",则: 降压面积%=—S'/S×100 升压面积%=S"/S+S"×100 降压面积百分比扣减升压面积百分比,得净升、降压面积百分此?髯椎?例如给药组与对照组间,或不同药之间,或不同动物之间)的面积百分比,可按t或F测验求出相差的显著性(P值)。比较药物的效果时,主要根据其净升、降压面积百分比的数值,同时还应参考统计学的显著性。为了说明“净升、降压面积百分比”之计算及应用,本文利用狗、猫、兔及大白鼠4种动物,注射利血平、藜芦碱、六烃季铵及肼苯噻嗪,按照以上公式计算,求得净升、降压面积百分比。结果证明六烃季铵及肼苯噻嗪的降压效果较强,利血平不使狗血压下降,使大白鼠升压。这些结果与文献报告是一致的。本方案的主要优点是:(1)不用任何特别单位;(2)无需复杂的数学演算;(3)结果能反映药物的作用且与文献相符;(4)无论对于临床或动物实验、药物或其他疗法、急性或慢性试验、升压或降压的效果,均可普遍应用。

关键词:

QUANTITATIVE COMPARISONS OF CHANGES OF BLOOD PRESSURE——“NET % OF HYPER AND HYPOTENSIVE AREAS”

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Abstract:

In order to compare the changes of blood pressure reasonably, concretely, simply, and quantitatively, the "net % of hyper and hypotensive areas", which integrates the considerations of the original level of blood pressure (*AD* in Fig. 1), the magnitude and the duration of the changes, is proposed. It is especially practical in the screening of drugs. Suppose the area between *AD* and the base line 0 mm Hg is S, the area between *AD* and the blood pressure curve below is *S*', and the area between AD and the blood pressure curve above is *S*", then % of hypotensive area=-*S*′/*S*×100, % of hypertensive area=*S*"/*S*+*S*"×100. The net percentages of different groups (e.g., control and drugs) may be compared by t or F tests. The assay results are considered in terms of both the net % and the statistical significance. For the purpose of illustrating its calculations and applications, 4 different drugs were tested on 4 species of animals. Hexamethonium and hydralazine were confirmed to possess a high hypotensive potency. Reserpine induced a slight elevation of blood pressure in rats and little effects in dogs; these were in conformity to the results of other investigators. The chief advantages of the present project are: 1) no need of special unit; 2) exemption from complicated mathematical computations; 3) adequate revelation of the influences; and 4) applicability to clinical or animal experiments, drug or other therapeutic measurements, acute or chronic trials, and hypertensive or hypotensive effects.

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