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1000名中国正常成人杏仁核体积高分辨力MRI测量

Volumetric measurement of amygdala of 1000 Chinese normal adults: Based on high-resolution MRI

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中文摘要:

目的 基于高分辨力MRI测量中国汉族正常成人杏仁核体积,探讨杏仁核体积与年龄、性别的关系。方法 采用全国15家医院多中心临床研究形式,选取1000名中国健康成年受检者,按年龄分为5组:18~30岁(第1组)、31~40岁(第2组)、41~50岁(第3组)、51~60岁(第4组)及61岁以上(第5组),行大脑三维磁化强度预备梯度回波序列T1WI,应用三维体积分析软件测量杏仁核体积。采用方差分析比较不同年龄组杏仁核体积,t检验比较不同性别、侧别杏仁核体积。结果 ①杏仁核体积在总体样本及各组内男、女性间差异均有统计学意义($P < 0.05$),男性大于女性。②总体样本左、右杏仁核体积差异有统计学意义($P < 0.001$),左侧高于右侧。③第1组、第2组及总体样本左侧杏仁核体积男性大于女性,第1组、第2组、第3组、第5组及总体样本右侧杏仁核体积男性大于女性,差异有统计学意义。④男性双侧杏仁核体积组间比较:第1组与第3~5组、第2组与第3~5组、第3组与第5组、第4组与第5组间差异均有统计学意义;女性:第1~4组与第5组间差异均有统计学意义。结论 高分辨力MRI能够清晰显示杏仁核形态,用于准确测量杏仁核体积,为建立中国汉族标准脑提供科学数据。

英文摘要:

Objective To measure the amygdala volumes of normal Chinese Han nationality adults based on high-resolution MRI, and to explore correlation of amygdala volume with the age and sex. **Methods** Totally 1000 normal Chinese Han nationality adults ranging from 18 to 78 years were selected from 15 hospitals, which were divided into 5 groups according to age: 18—30 years old (group 1), 31—40 years old (group 2), 41—50 years old (group 3), 51—60 years old (group 4), ≥ 61 years old (group 5). All subjects underwent brain MR scan with T1W 3D magnetization prepared gradient echo sequence. The amygdala volume were measured with 3D analysis software. The amygdala volume were compared with age and sex by ANOVA and *t*-test. **Results** Amygdala volume of male was larger than that of female in total samples and every group (all $P < 0.05$). Left amygdala volume was larger than that of right in total samples ($P < 0.001$). Left amygdala volume of male was larger than that of female in total samples in group 1 and group 2; right amygdala volume of male was larger than that of female in total samples, group 1, group 2, group 3 and group 5. Statistical differences were found in male bilateral amygdala volume between each two groups except group 1 and group 2, group 3 and group 4. Statistical differences were found in female bilateral amygdala volume between group 5 and other groups. **Conclusion** Amygdala can be displayed clearly and measured accurately with high-resolution MRI. Normal reference values of amygdala are provided for the Chinese normal standards brain database.

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