

## The application of statistical methods in Chinese Journal of Nuclear Medicine and Molecular Imaging

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**Abstracts Objective** To find out the present situation and problems of statistics used in Chinese Journal of Nuclear Medicine and Molecular Imaging (CJNMMI). **Methods** Papers in CJNMMI were sampled by multi-stage method from 2007 to 2011, whose research design, statistical description, statistical inference and statistical expression were investigated respectively. **Results** 116 papers were selected from CJNMMI. The utilization rate of control was 99.1% and there was no misuse of control. Application rates of randomization and blind method were 16.4% and 8.6%, the misuse rates of which were 31.6% and 20.0%. The application rates of arithmetic mean, standard deviation, ratio and relative ratio were 72.4%, 68.1%, 62.1% and 69.0% respectively. And the misuse rates of arithmetic mean and standard deviation were 6.0% and 5.1%. There were 83 papers (71.6%) using statistical inference methods including *t* test, *Chi-square* test, correlation analysis and analysis of variance. The misuse rates of *t* test and *Chi-square* test were the highest with 25.5% and 20.0% respectively. Almost all papers provided the sample size and statistics. Meanwhile 44.8% of papers offered the methods and parameters on which the sample size was based. However, there were still some papers which didn't offer  $\alpha$  level, *P*-value, the methods and basis for the sample size. **Conclusions** The application of control, statistical description and complicated statistical inference in papers selected from CJNMMI were better. However the application of randomization, blind method, simple statistical inference and statistical expression should be improved.

**Key words** Statistical methods, Application, Paper