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제 목	Hierarchical Bayesian 메타 분석법을 이용한 n-of-1 임상시험의 분석 Analysis of a series n-of-1 trials using an hierachical Bayesian meta-analysis.				
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분 야	역 학 [의료정보 및 통계]	발 표 자	한서경	발 표 형 식	구 연
<p><b>Purpose:</b> The randomized controlled trial is recognized as the design that provides the most reliable evidence, but often it is difficult to apply the design when we are particularly interested in finding out the best treatment for an individual patient. Clinical researchers have increasingly used n-of-1 trials in which a patient with a stable, chronic condition is observed. N-of-1 trials are useful but often regarded and ranked as case reports as the results are difficult to be generalised. Appropriate methods for rigorous statistical analysis are yet required to provide acceptable evidence of the efficacy of such treatments. This study is to illustrate an analysis of a series of n-of-1 trials using an idea of a hierarchical Bayesian meta-analysis to provide evidence for overall effectiveness.</p> <p><b>Methods:</b> We used a series of six n-of-1 trials of patients with tinnitus. Patients received a course of 10 acupuncture treatments over a two week period. Daily Diary entries related to the four tinnitus symptoms were recorded by patients for 14 days pre-treatment and 14 days post-treatment. A hierarchical Bayesian model was used to combine the results from the individual patients to obtain estimates of the population and individual patient treatment effects, incorporating random variations at both levels (between patients and within patient).</p> <p><b>Results:</b> The model derived a posterior distribution to describe the extent of the between patient variation, which enabled us to assess how closely the individual treatment effects related to each other. For each symptom the patient treatment effect and the overall treatment effect were expressed by the median with the 95% credibility interval and displayed in 'forest' diagrams for visual assistance. The model provided treatment effects which are adjustments between the effect in population and the individual's results.</p> <p><b>Conclusion:</b> There are aspects of the n-of-1 design which make it methodologically suited to clinical contexts where patients receive customised treatments. We demonstrated usefulness of application of n-of-1 trial and how difficulties associated with different levels of variations in such design can be handled and interpreted by using a hierarchical complex model utilising a Bayesian approach.</p>					