SUMMARY

“Side Effect of Hydroxyethyl Starch (HES) as Plasma Substitutes in Intensive Care Unit : Bayesian Meta-analysis”

Medical research is growing fast recently. A method for combining all the results of similar research is called narrative review. An expert in a given field would read the studies, summarize the findings and form a conclusion. There are two limitations in this method, the subjectivity inherent in this approach and the lack of transparency. For this reason, researchers in many fields have been moving away from narrative review and adopting meta-analysis. Meta-analyses are conducted to synthesize evidences from many researches and to determine the comprehensive conclusion about the question of research using statistics.

There are two major models in meta-analysis, fixed effect model and random effect model. In fixed effect model, true effect size in population is identical, and the only reason the effect size varies between studies is sampling error. By contrast, under random effect model, true effect size in population is normally distributed value. The goal in random effect model meta-analysis is to estimate the mean of a distribution of effect. In random effect model, the cause of heterogeneity is difficult to estimate. Therefore Bayesian model of random effect meta-analysis is needed to sharp estimation of effect size.

Pharmaceutical research in drug safety and effectivity has been grown significantly. One of them is research about the safety of Hydroxyethyl Starch (HES) as plasma substitutes in Intensive Care Unit. There are 10 articles of research collected from Ebscohost, Proquest, Pubmed and Springer. The result of
Meta-analysis in effect of HES and Non-HES is significantly different in Renal Replacement Therapy (p<0.05) with OR 1.256 (±0.146) and in Acute Kidney Injury (p<0.05) with OR 1.311 (±0.208). Furthermore, Bayesian meta-analysis in effect HES and Non-HES is not-significantly different in 28 day mortality (p>0.05) with OR 1.166 (±0.225) and in Acute 90 day mortality (p>0.05) with OR 1.112 (±0.219).
ABSTRACT

“Side Effect of Hydroxyethyl Starch (HES) as Plasma Substitutes in Intensive Care Unit : Bayesian Meta-analysis”

Pharmacuetical research in drug safety and effectivity has been grown significantly. One of them is research about the safety of Hydroxyethyl Starch (HES) as plasma substitutes in Intensive Care Unit. To estimate the greater effect size, Bayesian meta-analysis is needed. There are 10 articles of research are collected from Ebscohost, Proquest, Pubmed and Springer that used in this meta-analysis. The result of Meta-analysis in effect of HES and Non-HES is significantly difference in Renal Replacement Therapy (p<0.05) with OR 1.256 (±0.146) and in Acute Kidney Injury (p<0.05) with OR 1.311 (±0.208). Furthermore, Bayesian meta analysis in effect HES and Non-HES is not significantly difference in 28 day mortality (p>0.05) with OR 1,166 (±0.225) and in Acute 90 day mortality (p>0.05) with OR 1.112(±0.219).

Keywords: Hydroxyethyl Starch, Intensive Care Unit, Bayesian, Meta-analysis