

SYSTEMATIC REVIEW

Traditional Chinese Medicine (Herbal Preparations)

Objectives:

At the completion of this unit you will be able to:

1. Assess the credibility of a Systematic Review (SR).
2. Understand the concept of heterogeneity (differences or variation), and how this is measured.
3. Interpret a meta-analysis (MA) Forest Plot.
4. Appreciate the role of subgroup and sensitivity analysis in explaining sources of heterogeneity.
5. Be aware of the issues with subgroup.

Advanced learners can use this exercise to understand pooling across trials using different measures of effect, in particular those for continuous variables.

Reference (Reading):

In: Guyatt GH, Rennie D, Meade M, Cook DJ. Editors. Users' Guides to the Medical Literature: A Manual for Evidence Based Clinical Practice, 3rd Edition, New York, NY: The McGraw-Hill Companies, Inc. 2015.

• Part Summarizing the Evidence

Chapter 22, p.459 The Process of a systematic Review and Meta-analysis

Chapter 23, p.471 Understanding and Applying the Results of a Systematic Review and Meta-analysis

Chapter 25, p. 507 Advanced Topics in Systematic Reviews

25.1 Fixed-Effects and Random Effects Models p.507

25.2 How to use a Subgroup Analysis p.515

Educational Strategy:

1. Read the Users' Guides introductory chapter on Summarizing the Evidence, page 459 and the chapter on Understanding and Applying the results of a Systematic Review and Meta-analysis, page 471.
2. Advanced learners could review the chapters on Fixed-Effect and Random Effects Models, and subgroup analyses.
3. Read the scenario below.
4. Read the enclosed reference "Bin Zhu, Ying Wang, Meg Jardine, Min Jun, Ji-Cheng Lv, Alan Cass, Thaminda Liyanage, Hong-Yu Chen, Yong-jun Wan, Vlado Perkovic. Tripterygium Preparations for the Treatment of CKD: A Systematic Review and Meta-analysis. *Am J Kidney Dis.* 2013;62(3):515-530.".
5. Complete the critical appraisal form.
6. Return to the scenario and decide on your recommendations to the patient.

Clinical Scenario:

You are a physician working in the department of nephrology of a large hospital in Shanghai, China. Recently on a routine day, several senior physicians in your department organized a workshop to discuss the benefits and harms of Tripterygium Preparations for chronic kidney diseases (CKD). You know that for several decades, Tripterygium preparations, including Tripterygium glycoside tablets, Tripterygium hypoglucum Hutch tablets and Tripterygium granules, have been widely used in China for CKD. Putative benefits include proteinuria reduction, inhibition of renal fibrosis, and improvement in kidney function. The main ingredients of Tripterygium preparations are the Tripterygium wilfordii Hook F, a traditional Chinese herbal medicine, and its derived components. For thousands of years, Tripterygium wilfordii Hook F has been used to help patients with various kinds of kidney diseases, arthritis and other conditions, in the form of decoctions prepared with other herbs. In recent years, Tripterygium preparations were reported to cause liver toxicity, as well as pathologies of reproductive system, nervous system, cardiovascular system and digestive system. For example, several observational studies with humans and animal studies reported that when Tripterygium preparations were used in early childhood, fertility function would be impacted, and was especially so for males. However these troubling results were accompanied by trials that reported beneficial effects from Tripterygium preparations when used as immunosuppressive treatments. In your department, most of the in-patients were suffering from CKD, including diabetic nephropathy, primary glomerulonephritis, Henoch-Schönlein purpura nephritis and nephrotic syndrome, as well as other associated conditions. Most of the CKD patients are adults, but among them there are patients of childhood age. You have realized that the use of Tripterygium preparations is becoming a challenging and stressful topic in the treatment of CKD in China, given the unclear picture of its role in treating CKD. Though you are inclined not to prescribe this medicine to your patients, some of the senior physicians still recommend this treatment in cases when other treatments did not produce beneficial outcomes. Given your interest in the topic being offered in today's workshop and the lack of clarity on the effects of the treatment in CKD, you attended the discussion, and appraised the recently published systematic review:

Bin Zhu, Ying Wang, Meg Jardine, Min Jun, Ji-Cheng Lv, Alan Cass, Thaminda Liyanage, Hong-Yu Chen, Yong-jun Wan, Vlado Perkovic. Tripterygium Preparations for the Treatment of CKD: A Systematic Review and Meta-analysis. *Am J Kidney Dis*. 2013;62(3):515-530.

After critical appraisal of this review, will you still decline the use of Tripterygium preparations for your CKD patients?

Enclosed Materials:

Bin Zhu, Ying Wang, Meg Jardine, Min Jun, Ji-Cheng Lv, Alan Cass, Thaminda Liyanage, Hong-Yu Chen, Yong-jun Wan, Vlado Perkovic. Tripterygium Preparations for the Treatment of CKD: A Systematic Review and Meta-analysis. *Am J Kidney Dis*. 2013;62(3):515-530.
(together with four supplement figures and tables)