2.Cancer (Condition after Cancer Surgery and Unspecified Adverse Drug Reactions of Anti-cancer Drugs)
6. Nervous System Diseases (including Alzheimer's Disease)

Reference

Kuriyama A, Endo K. Goshajinkigan for prevention of chemotherapy-induced peripheral neuropathy: a systematic review and meta-analysis. *Supportive Care in Cancer* 2018; 26: 1051-9. Pubmed ID: 29280005, CRD42017062691

1. Objectives

To examine whether goshajinkigan（牛車腎気丸）prevents chemotherapy-induced peripheral neuropathy (CIPN) in patients receiving neurotoxic chemotherapy.

2. Data source

PubMed, EMBASE, Ichushi, the Cochrane Central Register of Controlled Trials: EMBASE was searched up to August 10, 2017, and all other databases up to August 15, 2017.

3. Study selection

Randomized controlled trials (RCTs) that assessed the efficacy and safety of goshajinkigan for prevention of CIPN in cancer patients undergoing neurotoxic chemotherapy were included.

4. Data extraction

The analysis included RCTs in patients aged ≥18 years with solid cancers who received neurotoxic chemotherapy including taxanes, vinca alkaloids, and platinum agents, and received goshajinkigan as “prophylactic” intervention against CIPN. The analysis excluded studies that examined goshajinkigan as a “treatment” in patients with CIPN. The search terms were: “goshajinkigan”, “gosha-jinki-gan”, “go-sha-jinki-gan”, “niu-che-shen-qi-wan”, and “TJ-107”. Two review authors independently conducted a literature search, data extraction, and analysis.

5. Main results

The analysis included 5 RCTs involving 397 patients. The primary outcomes were incidence of CIPN, response to chemotherapy, and adverse events related to goshajinkigan. The secondary outcomes were the proportion of patients that completed chemotherapy and disease control. When evaluated with Neurotoxicity Criteria of Debiopharm (DEB-NTC), goshajinkigan was associated with significantly reduced incidence of CIPN of grade ≥1 (risk ratio [RR] 0.43; 95% CI, 0.27 to 0.66) and grade 3 (RR 0.42; 95% CI, 0.25 to 0.71), but not grade ≥2. When assessed with the National Cancer Institute Common Terminology Criteria for Adverse Events (CTC-AE), goshajinkigan was not associated with reduced incidence of CIPN. Goshajinkigan did not improve response to chemotherapy.

6. Conclusions

Goshajinkigan is unlikely to prevent CIPN in patients undergoing neurotoxic chemotherapy. Given the low quality and insufficient amount of the evidence, use of goshajinkigan as standard of care is not currently recommended.

7. From Kampo medicine perspective

None.

8. Safety assessment in the article

Goshajinkigan was well tolerated based on one RCT.

9. Abstractor’s comments

This notable article describes a meta-analysis focused on the preventive effect of goshajinkigan on chemotherapy-induced peripheral neuropathy, which is difficult to manage even with modern medicine. However, it is problematic that studies of taxanes and platinum agents were not separated (3 studies of oxaliplatin, 1 study of paclitaxel, and 1 study of docetaxel). The primary pathology of neuropathy differs between these drugs, as taxanes cause damage to neuronal axons, while platinum agents cause damage to neuronal cells. Furthermore, although this article states that the results differed between the two assessment criteria (i.e., DEB-NTC vs. CTC-AE), there is a well-known inconsistency between results obtained using DEB-NTC, which prioritizes the duration of symptoms, and those obtained using CTC-AE, which prioritizes the severity of symptoms. Although the authors state the conclusion based on the results obtained using CTC-AE, one RCT with taxane-class anticancer drugs showed significant reduction of CIPN grade and incidence of CIPN after prophylactic administration of goshajinkigan, and thus it is inappropriate to conclude that this meta-analysis negates the efficacy of prophylactic administration of goshajinkigan. In addition, in terms of response to chemotherapy, not only potentiation but also a possibility of decrease should be considered. A re-analysis is desired at least after multiple similar RCTs with taxane-class anticancer drugs are published.

10. Abstractor and date

Motoo Y, 31 August 2019.