13. Diseases of the Musculoskeletal System and Connective Tissue

Reference

Ohta H, Nemoto K. Preventive effect of 1α-hydroxyvitamin D_3 plus Kampo medicine combination therapy on osteopenia following oophorectomy - comparison between keishibukuryogan and tokishakuyakusan -*. *Sanfujinka Kampo Kenkyu no Ayumi* (*Recent Progress of Kampo Medicine in Obstetrics and Gynecology*) 1990; 7: 65–70 (in Japanese).

1. Objectives

To evaluate the combined effect of keishibukuryogan (桂枝茯苓丸) or tokishakuyakusan (当帰芍薬散) and vitamin D3 on osteopenia in women during menopause.

2. Design

Randomized controlled trial (RCT).

3. Setting

One facility (Department of Obstetrics and Gynecology, Tokyo Electric Power Hospital), Japan.

4. Participants

Thirty patients diagnosed with osteopenia following oophorectomy at the above facility, with a total bone mineral density (MD) score of 4 or more points.

5. Intervention

Arm 1: oral α-calcidol 0.5 μg b.i.d. after meals (n=6).

Arm 2: oral α-calcidol 0.5 μg b.i.d. after meals + TSUMURA Keishibukuryogan (桂枝茯苓丸) Extract Granules 2.5 g t.i.d. before meals (n=6).

Arm 3: oral α-calcidol 0.5 μg b.i.d. after meals + TSUMURA Tokishakuyakusan (当帰芍薬散) Extract Granules 2.5 g t.i.d. before meals (n=6).

Arm 4: follow-up without drug administration (n=12).

6. Main outcome measures

Change in MD (mean percentage change in actual values of 5 variables: bone cortex width index, bone marrow width, bone cortex and marrow integrated density index, bone cortex density index, and bone density per unit length) compared between baseline and after 10 months of treatment.

7. Main results

Bone mineral content was significantly higher in arm 2 than in arm 1 and arm 4 ($p<0.05$), but similar to that in arm 3. Bone cortical width index was higher, although not significantly, in arm 3 than in arms 1 and 4.

8. Conclusions

Combination of keishibukuryogan and vitamin D3 decreases osteopenia in women without ovaries and seems to improve osteopenia.

9. From Kampo medicine perspective

These Kampo medicines controlled mental and physical disorders associated with ovarian deficiency syndrome consisting of *qi-no-josho* (気の上衝, *qi* counterflow pattern syndrome), *oketsu* (才血, blood stasis), and *suidoku* (水毒, water toxin), resulting in increases in appetite, and consequently Ca intake, intestinal absorption and motility, which may have indirectly increased bone mineral content. The higher efficacy of keishibukuryogan is attributable to its keishi and botanbi components, which may improve bone metabolism via PGE2- and cytokine-mediated immunostimulation.

10. Safety assessment in the article

Not mentioned.

11. Abstractor's comments

This study demonstrated that use of vitamin D3 as an adjuvant increases bone mineral content in patients following ovariectomy. The study results suggested that keishibukuryosan administered to those with *jitsusho* (実証, excess pattern), and tokishakuyakusan administered to those with *kyosho* (虚証, deficiency pattern), can be used for prevention and treatment of osteoporosis, greatly contributing to climacteric and geriatric medicine. Although the slightly higher efficacy of keishibukuryogan is pharmacologically discussed from the perspective of Kampo components in this study, it is desirable that future studies use a protocol that reflects the mechanism of bone metabolism and bone substance improvement from the perspective of Kampo theory.

12. Abstractor and date

Ushiroyama T, 16 August 2008, 1 June 2010, 31 December 2013.