Correction to Effect of vitamin K on bone mineral density and fractures in adults: an updated systematic review and meta-analysis of randomised controlled trials

A. Mott¹ · T. Bradley² · K. Wright³ · E. S. Cockayne¹ · M. J. Shearer⁴ · J. Adamson¹ · S. A. Lanham-New⁵ · D. J. Torgerson¹

Published online: 23 September 2020

© International Osteoporosis Foundation and National Osteoporosis Foundation 2020

Correction to: Osteoporosis International (2019) 30:1543–1559

<https://doi.org/10.1007/s00198-019-04949-0>

Following the work of Avenell et al. [1, 2] that has raised concerns about the integrity of the Yamaguchi Osteoporosis Prevention Study (YOPS) conducted by Ishida and Kawai, [3] we would like to issue an adjustment to our systematic review on the effectiveness of vitamin K on bone mineral density and fractures [4].

The work of Ishida and Kawai that has been questioned was included in our systematic review and was considered to be at high risk of bias. The study was included in four meta-analyses within our results. We feel there is a need for rapid correction when concerns, such as this one, are identified [5].

We do not think the removal of the YOPS study changes the overall results of our paper or the conclusions we drew regarding fractures or bone mineral density. We have provided

recalculated estimates for each of these meta-analyses without the YOPS study.

Total Clinical Fractures - Figure 2.

This meta-analysis was performed with a subgroup analysis based on the risk of bias assessment. As the study by Ishida and Kawai was deemed to be at high risk of bias, the results of the low risk of bias studies remain unchanged. Removal of the YOPS study changes the overall odds ratio (OR) from 0.72 (95%CI 0.55 to 0.95) to 0.74 (95%CI 0.56 to 0.97).

Total Vertebral Fractures - Figure 3.

This meta-analysis was performed with a subgroup analysis based on the risk of bias assessment. As the YOPS study was deemed to be at high risk of bias, the results of the low risk of bias studies remain unchanged. Removal of the Ishida and Kawai study changes the overall odds ratio from 0.96 (95%CI 0.83 to 1.11) to 0.98 (95%CI 0.85 to 1.14). This also does not change the conclusions or interpretation of our review.

Mean difference in Bone mineral Density of the Radius at 12 Months - Figure 4, part 3.

The YOPS study had a weighting of 37.49% in this meta-analysis and thus the removal of this study did change the estimate of the effect for this analysis. The estimate changed from 0.14 (95%CI – 1.04 to 1.33) to – 0.58 (95%CI – 1.24 to 0.08). This means that the result now favours the control arm over vitamin K.

The online version of the original article can be found at <https://doi.org/10.1007/s00198-019-04949-0>

✉ A. Mott
andrew.mott@york.ac.uk

¹ York Trials Unit, Department of Health Sciences, University of York, ARRC Building, York YO10 5DD, UK

² Chesterfield Hospital, Chesterfield Road, Calow S44 5BL, UK

³ Centre for Reviews & Dissemination, University of York, York YO10 5DD, UK

⁴ Centre for Haemostasis and Thrombosis, Guy's and St Thomas' NHS Trust, London SE1 7EH, UK

⁵ Nutritional Sciences Department, School of Biosciences and Medicine, Faculty of Health and Medical Sciences, University of Surrey, GU2 7XH Guildford, UK

Mean difference in Bone Mineral Density of the Radius at 24 months - Figure 5, part 3

Only two studies had data available for this, YOPS and Cheung et al. Taking the results only from Cheung et al. [6], the estimate would be 0.00 (95%CI - 0.85 to 0.85).

References

1. Avenell A, Grey A, Gamble GD, Bolland MJ (2020) Concerns about the integrity of the Yamaguchi Osteoporosis Prevention Study (YOPS) report. *Am J Med* 2004(117):549–555 *Am J Med* 133:e311–e314
2. Alpert JS (2020) Concerns about the integrity of Ishida Y, Kawai S. *Am J Med* 2004(117):549–555 The Reply. *Am J Med* 133:e315
3. Ishida Y, Kawai S (2004) Comparative efficacy of hormone replacement therapy, etidronate, calcitonin, alfacalcidol, and vitamin K in postmenopausal women with osteoporosis: The Yamaguchi Osteoporosis Prevention Study. *Am J Med* 117:549–555
4. Mott A, Bradley T, Wright K, Cockayne ES, Shearer MJ, Adamson J, Lanham-New SA, Torgerson DJ (2019) Effect of vitamin K on bone mineral density and fractures in adults: an updated systematic review and meta-analysis of randomised controlled trials. *Osteoporos Int* 30:1543–1559
5. Avenell A, Stewart F, Grey A, Gamble G, Bolland M (2019) An investigation into the impact and implications of published papers from retracted research: systematic search of affected literature. *BMJ Open* 9:e031909
6. Cheung AM, Tile L, Lee Y, Tomlinson G, Hawker G, Scher J, Hu H, Vieth R, Thompson L, Jamal S, Josse R (2008) Vitamin K supplementation in postmenopausal women with osteopenia (ECKO trial): a randomized controlled trial. *PLoS Med* 5:e196

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.