

The results of a meta-analysis suggest self-monitoring of anticoagulation status in people receiving long-term vitamin K antagonist therapy may improve outcomes whereas self-testing does not

Self-monitoring of vitamin K antagonist therapy

In this article...

- › How patients can carry out self-monitoring
- › Effectiveness of self-monitoring
- › Implications for practice

Many people with atrial fibrillation, heart valve disease or other conditions associated with a high risk of thrombosis are prescribed long-term anticoagulation treatment with vitamin K antagonists, such as warfarin. These patients need regular tests using the international normalised ratio to measure their blood's clotting tendency. Their medication dose is then adjusted to ensure clots are prevented without increasing the risk of bleeding. This repeated monitoring may be carried out in specialist anticoagulation clinics, or by primary or secondary care staff.

Alternatively, people can carry out these tests at home with point-of-care coagulometers (National Institute for Health and Care Excellence, 2014). They can then alter their own medication dose (self-management) or contact a health professional for advice on any changes to dosage (self-testing).

NICE (2014) recommends point-of-care coagulometers for self-monitoring of coagulation status in adults and children on long-term vitamin K antagonist therapy

who have AF or heart valve disease if:

- › The person prefers this form of testing;
- › The person or carer can physically and cognitively self-monitor effectively.

New evidence

Sharma et al's (2015) meta-analysis assessed the effectiveness of self-monitoring of anticoagulation status in this patient group. The authors searched for randomised controlled trials that compared self-testing or self-management of anticoagulation control using point-of-care coagulometers (self-monitoring) with monitoring by health professionals (standard care). The review included studies of adults and children with heart valve disease, AF or other clinical conditions requiring long-term vitamin K antagonist therapy. A total of 22 trials (8,394 participants) were included.

In a pooled analysis, self-monitoring was associated with a significant reduction in the risk of thromboembolic events compared with standard care. When the two different types of self-monitoring were considered, self-management was associated

with a significantly lower risk of thromboembolic events than standard care. No significant risk reduction was seen among trials of self-testing.

The risk of bleeding with self-monitoring did not differ significantly from that with standard care. However, self-testing was associated with a slightly higher risk of bleeding than standard care.

Self-management appeared to be associated with a reduction in mortality that was close to statistical significance. Self-testing had no effect on mortality.

● Reproduced with permission; adapted from: National Institute for Health and Care Excellence (2016) Self-monitoring for people on vitamin K antagonist anticoagulant therapy. *Eyes on Evidence*; 84. Study sponsorship: National Institute for Health Research

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- Sharma P et al (2015) Is self-monitoring an effective option for people receiving long-term vitamin K antagonist therapy? A systematic review and economic evaluation. *BMJ Open*; 5: e007758.

BOX 1. COMMENTARY

These data do not really add much to current evidence and unfortunately repeat the faults of previous reviews. The studies that drive the seeming improvement in outcomes with self-monitoring are those with high patient selection bias in areas where routine care was relatively poor.

Where routine care is good, as in the UK, no improvement in clinical outcomes is seen. Indeed, the one UK-based trial found no improvement in outcomes for

people using self-management – and this was five times as expensive as routine clinic-based care (Jowett et al, 2006). Many studies included in the review for NICE's diagnostics guidance did not include UK costs.

There are other patient benefits with self-monitoring in terms of convenience and not having to attend anticoagulation clinics. In my opinion, the ability to test without having to access a clinic is the most positive aspect of self-monitoring.

It is often noted that self-management seems to confer benefit whereas self-testing does not. This is most likely due to patient selection – only the most highly motivated and educated patients are deemed capable of adjusting their own dose. It may however reflect real improvement driven by increased patient autonomy.

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