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Title **Use of Point-Of Care Devices in Patients With Oral Anticoagulation: A Health Technology Assessment**

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Aim

To examine the clinical and cost effectiveness of using point-of-care (POC) devices by general practitioners (GPs), in anticoagulation clinics, or by patient self-testing (PST) and self-management (PSM), compared to standard laboratory testing for international normalized ratio (INR) monitoring.

Conclusions and results

Twenty randomized controlled trials (RCTs) were selected for a meta-analysis. The quality of the underlying evidence was moderate. Compared to laboratory testing in usual care, only PST (OR: 0.54-95% CI: 0.30-0.97) and PSM (OR: 0.39-95% CI: 0.27-0.56) had a significant impact on thromboembolic events. Only PSM had a significant impact on mortality (OR: 0.55-95% CI: 0.42-0.72). We found no impact of POC on major bleeding. With an equal number of tests as in the studied sample (15 tests), the use of POC was a cost-saving strategy compared to laboratory testing for all POC strategies (probability >70%). In every scenario investigated, PSM resulted in significantly more "life years gained" (LYG) than usual care and was on average cost-saving, except if 100% of GP consultations were maintained and 52 tests per year were performed (1757 euros (EUR) /LYG; 95%CI: Dominant to EUR 6521/LYG).

Recommendations

Organization of long-term oral anticoagulation monitoring should be directed toward PSM and, to a lesser extent, PST for selected and well-trained patients.

Methods

Major electronic databases were systematically searched. Results on major bleeding, thromboembolic events, and deaths were pooled in meta-analyses. The economic evaluation used the perspective of the Belgian healthcare payer. Cost data were obtained from Belgian charges databases. Uncertainty was handled by a probabilistic sensitivity analysis, and several scenarios were analyzed.

Further research/reviews required

We found only one RCT that addressed GP use of POC devices and another one that addressed the use of POC devices in anticoagulation clinics.

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