NICE National Institute for Health and Care Excellence

Medicines Evidence Commentary

commentary on important new evidence from Medicines Awareness Weekly

Published: March 2019

Secondary prevention after myocardial infarction: report on a new joint pharmacist-cardiologist medicines optimisation clinic at UK hospital

Appropriate secondary prevention after a myocardial infarction can reduce the risk of further cardiovascular events. Despite the benefits, many people may not be receiving optimal treatment. A new joint pharmacist-cardiologist medicines optimisation clinic at Leeds Hospital improved prescribing in line with NICE recommendations, increased medicines adherence and reduced appointment waiting times. This model of care is an example of how to support implementation of the NICE guidelines on myocardial infarction and cardiovascular disease. Furthermore, the tailored approach to address an individuals' specific adherence difficulties supports NICE recommendations on medicines adherence and medicines optimisation.

Overview and current advice

Each year in England there are over 157,000 hospital visits because of myocardial infarction (MI, heart attack); and there are around 750,000 people alive in England who have survived an MI (British Heart Foundation – BHF Statistics Factsheet England). In people who have had an MI it is essential to start a long-term programme of secondary prevention through risk modification, and medicines optimisation is a key element to this.

The NICE guideline on myocardial infarction: cardiac rehabilitation and prevention of further cardiovascular disease recommends that all people who have had an acute MI receive an angiotensin-converting enzyme (ACE) inhibitor, dual antiplatelet therapy, a beta-blocker and a statin. The guideline also recommends that the dose of the ACE inhibitor and the beta-blocker be increased to the maximum tolerated or target dose.

Despite these guidelines, studies suggest that many people are still receiving suboptimal secondary prevention care post-MI:

- A UK observational study found that over a quarter of people with pre-existing coronary heart disease who were readmitted with an acute coronary syndrome (ACS) were receiving a suboptimal secondary prevention medicine regimen. The study found that 24% of people were not taking an antiplatelet, 20% were not taking a statin and 30% were not taking either an ACE inhibitor or an angiotensin receptor-II blocker (ARB; Rathod et al. 2012).
- A meta-analysis of 20 studies that assessed adherence with medicines to prevent cardiovascular disease (including aspirin, ACE inhibitors and statins) found that adherence was around 57% after a median of 24 months follow-up (Naderi, Bestwick and Wald 2012).

New evidence

Khatib et al. (2018) report on a retrospective analysis of data from 270 post-MI patients seen in a joint pharmacist-cardiologist medicines optimisation clinic at Leeds Teaching Hospitals NHS Trust between October 2015 and December 2016. People attending the clinic had a comprehensive medicines review, and the impact on medicines adherence, waiting times and readmission rates was reported.

People who did not need any further non-pharmacological interventions saw a consultant cardiology pharmacist, and people who did need further interventions (for example, staged percutaneous coronary intervention) saw a cardiologist. Most people (more than 95%) seen by the pharmacist did not need input from a cardiologist. Standard clinic appointments ran for 20–25 minutes and people with more complex medicines-related needs had a 45 minute appointment. The mean age of people attending the clinic was 67 years, 68% were male and 77% had no history of prior MI (person was presenting with their first MI).

Adherence to the NICE guideline on MI improved after the clinic appointment:

- Before the clinic, 16.3% of people (33/203) were receiving the recommended dose of ACE inhibitor or ARB; this increased to 73.9% (150/203) after the clinic appointment ($p<0.001$). Similar results were seen with the number of people taking the recommended beta-blocker dose, increasing from 6.2% (15/241) to 46.1% (111/241) after the clinic. Improvements were also seen in antianginal, statin and antiplatelet prescribing.
- Statistically significant reductions in non-adherence rates with ACE inhibitor/ARB, beta-blocker, statin and second antiplatelet therapy were reported, falling from 13.6–21.5% non-adherence before the clinic to 4.2–7.8% non-adherence 3–6 months post-clinic (all $p<0.05$).

Other benefits of the new joint clinic included:

- An increase in patients' understanding of why they are taking their cardiac medicines and a reduction in concerns about their medicines.
- A reduction in mean waiting times from discharge to first outpatient appointment, from 88 days before the service to 49 days once the new clinic was set up (a 44% reduction).
- A decrease in readmission rates for ACS at 30, 60 and 90 days post-discharge, compared with data from the previous year.

Commentary provided by NICE

This study found that a medicines optimisation and patient adherence strategy based on a primarily pharmacist-led clinic can improve both medicines adherence and outcomes post-MI.

This study has some limitations that should be considered:

- This was a retrospective, observational study and therefore at risk of confounding and bias.
- For most outcomes there was no comparator group, with comparisons limited to baseline or data from the previous year. The authors did report that prescription persistence (the number of people still having their prescriptions dispensed) was higher at 11–12 months after discharge in people seen in the new medicines optimisation clinic, compared with people not seen in this clinic. However, this outcome was only reported in 50 people, and it is not clear how people in the comparator group were selected.
- The study only reported adherence rates 3–6 months post-clinic; adherence beyond this time point is not known.

Despite these limitations, this study is an interesting example of how NICE guidance can be implemented and audited at a local level, and how novel methods of service delivery can improve quality of care in people who have had an MI. The approach taken in Leeds of using a tailored

approach to address individual's specific adherence difficulties supports NICE recommendations on medicines adherence and medicines optimisation.

This work has been featured in the shared learning database on the NICE website. See the shared learning case studies for over 500 examples showing how NICE guidance and standards can improve local health and social care services.

Study sponsorship

The proof-of-concept phase of the service was partially funded by Astra Zeneca and then subsequently commissioned by Leeds Clinical Commissioning Groups.

References

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