

Review: Multidisciplinary CHD management programs improve the process of care and reduce hospitalizations

McAlister FA, Lawson FM, Teo KK, Armstrong PW. Randomised trials of secondary prevention programmes in coronary heart disease: systematic review. *BMJ*. 2001 Oct 27;323:957-62.

QUESTION

In patients with coronary heart disease (CHD), do multidisciplinary disease management programs (DMPs) improve processes of care and reduce morbidity and mortality?

DATA SOURCES

Studies were identified by searching MEDLINE (1966 to 2000), EMBASE/Excerpta Medica (1980 to 1999), CINAHL (1982 to 1999), SIGLE (1980 to 1999), the Cochrane Controlled Trials Register, and the Cochrane Effective Practice and Organization of Care Study Register with the terms case management, health services research, home care services, clinical protocols, patient care planning, quality of health care, rehabilitation, nurse-led clinics, special clinics, and myocardial ischemia. Bibliographies of identified studies were scanned, and experts were contacted.

STUDY SELECTION

Studies were selected if they were randomized controlled trials in any language investigating the effect of DMPs on death, myocardial infarction, or hospitalization in patients with CHD. Exclusion criteria were primary prevention studies, single modality inter-

ventions, inpatient interventions, or < 50 patients.

DATA EXTRACTION

Data were extracted by 2 independent reviewers on study quality, duration of intervention, length of follow-up, and key components of the intervention.

MAIN RESULTS

12 trials ($n = 9803$) were included. Patients who received the DMP intervention did not have greater reductions in recurrent MI (7 trials) $\{P = 0.44\}$ * or all-cause mortality (10 trials) $\{P = 0.40\}$ * than did those who received usual care (Table). Hospitalizations were reduced among patients who received the DMP intervention (6 trials) $\{P = 0.01\}$ * (Table). 5 of 7 trials showed that DMPs

reduced cardiovascular risk factors (cholesterol level, smoking, and blood pressure). 5 of 7 trials showed increased prescriptions of efficacious drugs (antiplatelet agents, β -blockers, or lipid-lowering drugs).

CONCLUSION

In patients with coronary heart disease, multidisciplinary disease management programs increase prescription of efficacious drugs and reduce hospitalization but do not reduce recurrent myocardial infarction or all-cause mortality in the short term.

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* P values calculated from data in article.

Multidisciplinary disease management program (DMP) vs usual care for coronary heart disease at 0.5 to 48 months†

Outcomes	Weighted event rates		RRR (95% CI)	NNT (CI)
	DMP	Usual care		
Recurrent MI	7.7%	7.8%	6% (-10 to 20)	Not significant
All-cause mortality	8.04%	8.1%	9% (-4 to 21)	Not significant
Hospitalization‡	23%	27%	14% (4 to 23)	30 (17 to 125)

†MI = myocardial infarction. Other abbreviations defined in Glossary; RRR, NNT, and CI calculated from data in article. A fixed-effects model was used.
‡Calculated from data provided by author.

COMMENTARY

Assessment of risk in patients with CHD is often incomplete, and many patients do not receive optimal treatment (1). Systematic approaches to care are central to all quality-improvement initiatives. It is reassuring that the meta-analysis by McAlister and colleagues found that DMPs have a positive effect on processes of care (better risk-factor profiles and more prescribing of effective drugs) and on quality of life and hospital admission rates.

Should we be disappointed or even interested that the investigators did not detect statistically significant effects on mortality and reinfarction rates? Not really, as long as the treatments that were targeted for enhanced delivery were themselves known to be efficacious. The organizational interventions tested in the included trials were diverse. Not all conformed to the definition of a comprehensive DMP suggested by McAlister and colleagues. For example, the largest trial contributing to the meta-analysis evaluated psychological rehabilitation after MI (2). Furthermore, individual trials were small (98 to 2328 participants) compared with the original efficacy studies (which often had many more participants), and the duration of follow-up was short in most of the studies reviewed (as short as 2 wk) compared with years of follow-up in the efficacy studies. Clearly, these studies were underpowered to detect benefits in morbidity and mortality.

What we should mainly require of an organizational intervention is that it enhance delivery of evidence-based interventions. But we certainly need evidence from other sources that the component interventions (such as lifestyle counseling, medication, and psychological support) can improve outcomes.

Another important reason to study organizational interventions is to determine which components and combinations of treatments and delivery improve the processes of care. We cannot easily judge this from the trials included in this review. To analyze complex interventions, other forms of inquiry are needed, particularly those that explore the experiences of patients and professionals (3). Qualitative studies, surveys, time-series analyses, and economic studies can all help in interpreting data on effectiveness from trials.

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References

1. Moher M, Yudkin P, Wright L, et al. *BMJ*. 2001;322:1338-42.
2. Jones DA, West RR. *BMJ*. 1996;313:1517-21.
3. Bradley F, Wiles R, Kinmonth AL, Mant D, Gantley M. *BMJ*. 1999; 318:711-5.