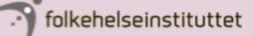2016

Bruk av skjema i oppfølging av diabetes i allmennpraksis

Systematisk oversikt

Use of structured data collection for diabetes care in General Practice: A systematic review

This is an excerpt from the full technical report, which is written in Norwegian. The excerpt provides the report's main messages in English.

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Key messages

The majority of patients with type 2 diabetes in Norway are followed up in primary care. We have investigated the effect of using a structured way of registering clinical data (structured data collection of for example HBA1c and blood pressure) on mortality and morbidity for patients with diabetes type 2.

MEDLINE, EMBASE, ISI Web of Science, Cochrane CENTRAL and PubMed were searched and trials 1) with adults over 18 with diabetes who were followed up by their General Practitioner and 2) looking at the effect on mortality and morbidity with or without using a structured data collection were included. The results were summarised narratively or in meta-analyses.

We included eight trials. One trial (1262 participants) investigated the effect on:

- Mortality (HR 0.91; 95% KI 0.72 – 1.14)
- Myocardial infarction (OR 0.65; 95% KI 0.31 – 1.35)
- Stroke (OR 0.89; 95% KI 0.39 – 2.01)
- Peripheral neuropathy (OR 0.86; 95% KI 0.57 – 1.29)
- Retinopathy (OR 0.90; 95% KI 0.53 – 1.52)

without finding a clear effect. Eight trials investigated the effect on risk factors. Structured data collection seems to have little or no effect on body weight (4 trials), but a small, positive effect on blood pressure (7 trials) and total cholesterol (3 trials).

Published data do not provide clear answers, but shows a possible trend in favour of using a structured way of registering clinical data, for patients with diabetes being followed up by their general practitioner on mortality and morbidity.

Title:
Use of structured data collection for diabetes care in General Practice
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Type of publication:
Systematic review
A review of a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyse data from the studies that are included in the review. Statistical methods (meta-analysis) may or may not be used to analyse and summarise the results of the included studies.

Doesn't answer everything:
- Does not assess benefits of estabiishing a national register
- Does not assess patient or health personell experiences
- Dies not asses financial aspect, e.g. time used for General Practitioner
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Sirin Johansen, Board member of the Norwegian Association of General Practice, General Practitioner in Tromsø.

Executive summary (English)

Background

In 2014 approximately 220 000 people were diagnosed with diabetes mellitus in Norway. 80 to 90 percent of these had diabetes type 2. Most patients with type 2 diabetes are being cared for by their General practitioner. The Norwegian College for General Practice published from 1988 to 2004 a program for diabetes in primary care. In 2009 The Norwegian Directorate of Health published national guidelines on prevention, diagnosing and treatment of diabetes. This guideline highlights the importance of dietary change, smoking cessation, physical activity and regular control every two to six months of blood sugar, blood pressure, cholesterol and weight.

Use of structured paper or electronic data collection methods to enable systematic registration of clinical data can improve care for people with chronic diseases. Data collection for use in diabetes care range from paper based collection to advanced electronic collection which integrates algorithms. The data may be used to create individualised feedback at a patient level as well as generating automated feedback on how the patients of one doctor are doing or how one general practice is doing compared to a national or regional average. A Norwegian electronic data collection system has been developed for use in general practice for patients with diabetes (NOKLUS` diabetes data collection tool). The data collection is meant to be both a clinical tool for the general practitioner and to provide data for The Norwegian Diabetes Register.

Objective

Several systematic reviews look at different interventions in diabetes care, but none look specifically at the use of structured data collection in registering clinical data. We have been asked by The Norwegian College for General Practice to conduct a systematic review on the effect of structured data collection by the general practitioner for patients with diabetes.

Method

We searched MEDLINE (Ovid), EMBASE (Ovid), ISI Web of Science, Cochrane CENTRAL and PubMed for trials including adults over 18 years with a diabetes diagnoses which compared the use of structured data collection with treatment as usual. The trials also had to report one or more outcomes: mortality, coronary disease, stroke, diabetic nephropathy, peripheral neuropathy and retinopathy or risk factors such as blood sugar (HbA1c), blood pressure, weight and cholesterol.

We assessed risk of bias in the included trials with the Cochrane risk of bias tool (RoB). Data from the different studies were pooled if feasible. Grading of Recommendations, Assessments, Development and Evaluation (GRADE) was used to evaluate the quality of the evidence.

Results

We identified 2940 references and after having assessed 64 in full text, we included eight trials published between 2001 and 2011. Seven trials were cluster randomised trials, while one trial was a clinical controlled (non-randomized) trial. Three trials were conducted in USA, two in the Netherlands, one in respectively United Kingdom, Canada and Denmark. The smallest trial included 389 patients and the largest 7412 patients. Systolic blood pressure measured at baseline varied across the studies, from a mean of 127 mm Hg to 155 mm Hg. The majority of the trials had developed procedures for structured data collection based on guidelines, but the procedures differed in how the gathered data were processed and communicated back to doctors and patients. Some trials had developed structured advice on how to continue care or follow up of patients, while others gave feedback on an aggregated level.

One trial reported results on the mortality, coronary disease, stroke, peripheral neuropathy and retinopathy. This Danish trial followed 1262 participants for six years, but results did not give a clear answer to whether structured data collection reduced mortality (HR 0.91; 95% CI 0.72 to 1.14), angina pectoris (OR 0.90; 95% CI 0.49 to 1.66), non-fatal infarct (OR 0.65; 95% CI 0.31 to 1.35), non-fatal stroke (OR 0.89; 95% CI 0.39 to 2.01), peripheral neuropathy (OR 0.86; 95% CI 0.57 to 1.29) or retinopathy (OR 0.90; 95% CI 0.53 to 1.52). The results point in the same positive direction, but the quality of the evidence is not high enough to give a clear answer. No trial reported results for diabetic nephropathy.

Eight trials investigated if structured data collection diabetes care affected micro albuminuria, blood sugar (HbA1c), blood pressure, weight or lipids. The results tend towards structured data collection, but the changes were too small to be considered of clinical significance. For example, systolic blood pressure showed an average reduction of 2.99 mmHg (5 trials). The quality of the evidence was moderate for micro albuminuria, HbA1c, blood pressure, and cholesterol, primarily due to broad confidence intervals. The use of structured data collection will probably have little or no effect on body weight.

Discussion

This systematic review identified one trial investigating the effect of structured data collection on mortality and morbidity. The results show a positive tendency, but the quality of the evidence is not high enough to confirm or invalidate an effect. Another seven trials looked at the effect on risk factors using a structured data collection. We found that use of structured data collection probably decreases blood pressure and cholesterol levels, but the effect size is small. Use of structured data collection has prob-

ably no or little effect on body weight and the effect on blood sugar and the micro albuminuria are uncertain. It is surprising that there are so few trials. This indicates that data to draw firm conclusion on the effect of structured schema are missing.

We did not search for qualitative studies which could have answered how patients and doctors experienced the use of structured data collection. In the same way as the objective and the methods in this systematic review have limitations so does the included trials have limitations. The interventions in the included trials varied; in the way they were designed and performed as well as in how the results were fed back to patients and doctors. Other limitations are that the follow up time for the majority of the trials was one year. The trials included in this systematic review are conducted in developed countries, with patients and health systems similar to the Norwegian, perhaps with the US as an exception.

Quality improvement interventions in clinical practice show a small to moderate effect across interventions and clinical areas. Systematic reviews, not limited to patients with diabetes, have shown that computer based systems for clinical decision making can contribute to change in practice among health personnel and possibly give health benefits for patients. Given these results from other systematic reviews, it is therefore expected that our findings were uncertain.

Conclusion

Published data do not provide clear answers, but shows a possible trend in favour of using a structured way of registering clinical data, for patients with diabetes being followed up by their general practitioner on mortality and morbidity.