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– a Health Technology Assessment

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Summary

Background

Chronic pain is a living condition for many people today. According to a Danish epidemiologic survey, 16-20% of the adult Danish population suffers from chronic pain. The multidisciplinary pain centre at Copenhagen University Hospital treats around 300 patients with chronic pain annually. Even though the treatment helps the patients, some patients may have to live with pain for the rest of their lives. After the discharge from the pain centre, the patients' general practitioners (GP) take over the responsibility of care including pain management.

Follow-up visits by specialised nurses have been offered to patients suffering from other chronic diseases and have been shown to have good effect on various parameters. In 1999 it was decided to offer follow-up visits by specialised pain nurses to chronic pain patients after discharge from the multidisciplinary pain centre. It was also decided to undertake a health technology assessment (HTA) to systematically document the achieved benefits from such a program. The underlying hypothesis was that after discharge from the multidisciplinary pain treatment patients' health-related quality of life would slowly deteriorate, and that follow-up visits could reduce such deterioration. The HTA was also designed to explore the practical issues relating to implementing a program of follow-up visits, to assess whether patients perceived such a program as an acceptable and valuable offer, and whether patients who had received follow-up visits would reduce their use of health care services.

Method

A literature study on follow-up visits to patients with rheumatologic diseases, diabetes, and elderly people in general was performed, as no studies on follow-up visits to chronic pain patients could be identified. The health effect of the program on health related quality of life was investigated in a randomized controlled trial (RCT) that enrolled 102 patients. Fifty two patients were included in the intervention group and fifty in the control-group. The intervention group received home visits every 4th month over a two-year period. Both groups completed questionnaires at baseline and 8, 16 and 24 month after enrolment into the study. The questionnaires included: SF-36 (Medical Outcomes Study Short Form 36 Health Survey), PGWB (Psychological General Well-Being), MDI (Major Depression Inventory), Coping Strategies Questionnaire (CSQ), and EQ-5D (European Quality of Life). Patients' perception of the visits was evaluated by questionnaires at the end of the two year period, and by focus group interviews with selected patients. Data concerning the use of health care resources were collected from administrative registers from the five hospitals in the catchment area and the primary care service.

Results

Literature review

As no relevant studies were found concerning follow-up visits to chronic pain patients, the study was focused on follow-up interventions to elderly people and to patients with diabetes and rheumatologic diseases. These patient groups were chosen because living with these chronic diseases or conditions in some respect is similar to living with chronic pains. The literature review found that the best outcome was achieved if the follow-up interventions took place over a long time period and included several visits. The interventions should be individualised and the amount of time spend with patients was positively associated with the perceived benefit or increase in selected outcome scores. The nurses and their personalities were important factors for the outcomes. The review shoved that follow-up visits produce better results when nurses are extensively trained (1).

Randomized controlled trial: Health related outcome

The follow-up interventions appeared to improve patients' health related quality of life measured by SF-36. Especially in the sub-scales of physical functioning, physical and emotional role clinical relevant improvements were achieved compared with the control group. This improvement was maintained after adjustment for differences between the control and intervention group in baseline scores, although only the difference in physical functioning was statistically significant.

In addition, follow-up nurse visits seem to have a beneficial effect by preventing an increase in the opioid consumption among patients taking opioids. The nurse visits appeared to reduce the patients' use of catastrophizing. The nurses also detected symptoms of depression and were able to refer the patients to their general practitioner for treatment at an early stage.

The analysis of the health related quality of life measured by the EQ-5D instrument also shoved clinical important effects in the intervention group, although the increase was not significant after controlling for differences in baseline score. Converted to quality adjusted life years (QALY) the intervention group patients achieved positive effect compared to the control group.

Explorative sub-group analyses with patients with different levels of health-related quality of life revealed that patients with low physical health related quality of life (SF-36 Physical summary scale) increased their physical health related quality of life significantly and decreased significantly in pain. These were also patients who used catastophizing to a high degree and / or patients, who received opioid treatment at discharge from the pain centre. Such a patient group may be relevant as the future target group for follow-up nurse visits.

Key partners' evaluation of the follow-up intervention

The patients in the intervention group stated that the follow-up intervention meant a lot to them, and they were satisfied with the way the visits had been practised in terms of place, contents and frequency. The patients pointed out, that the contact to a competent expert in pain management provided security. The pain nurse became a person, with whom the patients in the intervention group could discuss pain related problems and who could help them solve their health problems. The patients felt it was important that the nurse had been a member of the multidisciplinary team and thus knew their treatment history, although changes of nurses caused no trouble and a trustful relationship was quickly established between patient and nurse. Most patients felt that continued connection to the pain centre would be advantageous.

The analysis of the participants' "willingness to pay" for the follow-up visits showed that both patients in the intervention and control group had a positive "willingness to pay" for follow-up nurse visits. Open questions revealed a mean "willingness to pay" around 1,000 DKK for 3 annual visits. Measured by the alternative "discrete choice" method, the "willingness to pay" was 1,5-2,5 higher. These results indicate that the follow-up visits were highly valued by patients in both intervention and control group.

The follow-up nurse visits were judged by the nurses to be a valuable supplement to the established pain treatment. The nurses found that most of the patients benefited from the visits, but that the need for visits was greater for some patients than for others. The nurses found that the GP´s were positive towards collaboration. Only few GP's returned an evaluation form (n=24). Of these, four physicians found that the visits were a positive initiative, and three were neutral and assumed that the patients were content. One physician together with a patient proposed that the discharge from the pain centre should be well prepared and a follow-up consultation should take place after one year.

Economic analysis

The total cost of the 2-year follow-up program for the 52 patients was estimated to 260,000 DKK, or 5,000 DKK per patient (2004 price level). During the intervention period the intervention group patients used on average of 20,934 DKK less health care resources than the control group patients (net cost i.e. saving including the extra cost of the follow-up visits), correspondent to a saving in health costs at about 37% although the net saving was not statistically significant. The major part of the saving was related to fewer outpatient clinic visits and hospital admissions in the intervention group compared to the control group, while the intervention group had more GP consultations. Moreover the consumption of pharmacotherapy, which was not included in the cost analysis, was lower in the intervention group, due to a stabilised opioid consumption and a reduction of the antidepressive treatment. When the estimated cost saving was adjusted for the differences in healthcare costs during the two years before treatment and during the

treatment period, the cost difference was reduced to 15,764 DKK. The cost-effectiveness analysis showed that follow-up nurse visits with a probability of 35-43% is cost-effective.

Conclusion

The first hypothesis that the intervention can prevent reduction in health related quality of life in the intervention group was partly confirmed, although the sample was too small to achieve significant differences between the two groups. Calculation of both health related quality of life (HRQoL) and quality adjusted life years (QALY) showed that the intervention group had better HRQoL and more QALYs compared to the control group.

The opioid consumption increased in the control group but not in the intervention group. The nurses detected signs of depression in 80% of the patients, who during the two-year follow-up developed depression, and thus could refer the patients to early relevant treatment.

The study revealed that follow-up nurse visits can be provided within the basis of the existing healthcare system and form a relevant and useful treatment option to the patients (second hypothesis). The nurses found that all patients benefited from the visits, but some patients evidently had a greater need for the visits. Among the few GP´s who evaluated the intervention, there was a positive attitude to the initiative.

The third hypothesis, that the intervention reduced patients' need for contacts to the health care system was confirmed, although not with statistically significance. Patients in the intervention group used 37% less resources in the health care system (especially in the hospital system) during the two years follow-up. The direct saving more than balances out the additional costs of the follow-up visits. In conclusion, the economic analysis showed that follow-up nurse visits tend to be a cost-effective intervention (more QALY and less costs).

Interviews among the relevant participants showed that follow-up nurse visits can be provided within the existing healthcare system and will be a relevant and useful offer to a group of patients where there exist no specific treatment options. Patients in the intervention group expressed great satisfaction concerning the intervention and the patients showed positive "willingness to pay" for follow-up nurse visits after discharge from the multidisciplinary pain centre. It was pointed out that it is important that the treatment offer is based at the multidisciplinary pain centre.

In concordance with the latest recommendations from the National Board of Health about the services provided to patients with chronic diseases or conditions, this HTA has shown that follow-up nurse visits to patients with complex chronic pain condition has an effect, especially in patients

with low physical health related quality of live, patients with depressions, patients using high degree of catastrophizing and patients treated with strong opioids.

The study also shows that follow-up nurse visits to chronic pain patients after discharge from multidisciplinary pain treatment meet the recommendations from the National Board of Health about using the most cost-effective care and treatment level.

On the basis of this HTA, the project group recommends that nurse follow-up visits should be implemented. It is recommended that a systematic monitoring of the outcome and costs should be conducted in the future. The project group recommend that patients should be carefully selected and the intervention offered to the patients most likely to benefit most from the intervention. This includes pain patients with low physical health related quality of life, patients using catastrophizing to a high degree, and patients in treatment with antidepressants or opioids.

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