Reduction of sick leave for lumbar back and posterior pelvic pain in pregnancy

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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Using a physiotherapy consultation incorporating a differentiated, individual-based programme on sick leave during pregnancy, for women experiencing lumbar back or posterior pelvic pain. The individually designed programme starting after back pain assessment incorporated elements such as teaching the women to understand their specific situation; teaching anatomy, body posture, vocational ergonomics, gymnastics, pelvic bottom training, and relaxation training; designing an individual exercise programme for pain type and pain intensity; training the women with lumbar back pain as non-pregnant patients with back muscle strengthening exercise; teaching women with posterior pelvic pain not to overload the pelvis; and offering a non-elastic support to women with posterior pelvic pain. No passive treatment was given; respecting pelvic pain and reducing vigorous locomotion accordingly were considered important. Five visits were offered at the physiotherapists. The women were examined approximately 8 weeks after the onset of pain, which was later than intended because of the schedule of antenatal controls in Sweden.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Pregnant women attending a specific antenatal clinic and experiencing lumbar back or posterior pelvic pain.

Setting
Primary care (antenatal clinic). The economic study was carried out in Sweden.

Dates to which data relate
The effectiveness and resource use data corresponded to the patients who delivered at the study hospital between 1 September and 29 February 1992. The price year was 1990.

Source of effectiveness data
The evidence for final outcomes was based on a single study.

Link between effectiveness and cost data
Costing was prospectively undertaken on the same patient sample as that used in the effectiveness analysis.

Study sample
Power calculations were not used to determine the sample size. The study sample consisted of 54 women in the
intervention group versus 81 women in the control group; all of the women included in the study sample were set to be delivered in the study hospital during one specific 6-month period. The intervention clinic was approximated to register 140 pregnant women per year versus 350 in the control group. The women in the control group were chosen from those born on odd days.

Study design
This was a prospective non-randomised controlled trial, conducted in 2 clinics (one intervention clinic and one control clinic) in the same area in Sweden. The duration of the follow-up appears to have been until delivery in the hospital. There was no loss to follow up in either study group during the 6-month study period.

Analysis of effectiveness
The principle used in the analysis of effectiveness appears to have been intention to treat. The clinical outcomes were pain intensity on a 0-10 visual analog (VA)-pain scale estimating pain at its maximum, at its minimum, and at present; and days on sick leave. A questionnaire was completed during the first visit to the physiotherapist. At every subsequent visit, a new VA pain scale and a pain drawing were completed. The usefulness of the physiotherapy consultations was assessed by the women after partus. The study groups were found comparable in terms of demographic, socio-economic, and prognostic features.

Effectiveness results
The pain intensity at its maximum at the first visit to the therapist was 7.3 (SD, 1.4) as opposed to 6.2 (SD, 3.2) in week 36 (p<0.05) when pain was at its maximum. No statistically significant differences were noted in the other pain intensity registrations.

The mean number of physiotherapist visits was 3.4 times, for a total of 4 hours. The women found the visits useful.

The number of patients on sick leave was 33 in the intervention group, for an average of 3.1 occasions (range: 1-7, SD=1.1), with a total average of 30.4 days per woman. The corresponding value in the control group was 45 for an average of 3.3 occasions (range: 1-6, SD=1.2), for a total average of 53.6 days per woman. A statistically significant difference in sick leave was noted between the two study groups (p<0.001).

The most common diagnosis was posterior pelvic pain and no patient had nerve root syndrome.

Clinical conclusions
This study showed that an accessible, individual physiotherapy programme based on information and ergonomic advice was effective in reducing sick leave during pregnancy. Pain intensity was significantly reduced during pregnancy from the first consultation to the 36th week.

Measure of benefits used in the economic analysis
Reduction in the number of days of sick leave during pregnancy appears to have been the implicit benefit measure adopted in the study.

Direct costs
Costs were not discounted as the time frame of the study was less than one year. Quantities were reported separately from the costs. Unit cost was reported separately. The direct cost analysis covered the costs of physiotherapy. The perspective adopted in the direct cost analysis appears to have been that of the public care system. The date of the price data was 1990.

Indirect Costs
Indirect costs were not discounted as the time frame of the study was less than one year. Quantities were reported separately from the costs. The indirect cost was based on the average cost for 22 days of sick leave (the number of workdays in a month). The perspective adopted in the analysis of indirect costs appears to have been that of the social insurance. The source of the cost data was The Social Insurance Office in the study area in Sweden. The date of the price data was 1990.

**Currency**
US dollars ($).

**Sensitivity analysis**
Not conducted.

**Estimated benefits used in the economic analysis**
The number of days of sick leave during pregnancy in the intervention group was approximately half the corresponding number in the control group.

**Cost results**
The total direct cost of physiotherapy for the intervention group was $3,778. The saving due to the reduced number of days on sick leave for the intervention group was $57,200; yielding a total saving of $53,412.

**Synthesis of costs and benefits**
Costs and benefits were not combined since the intervention programme was the dominant strategy.

**Authors’ conclusions**
Sick leave for lumbar back and posterior pelvic pain in the intervention group was significantly reduced with the programme, and the programme was cost-effective.

**CRD COMMENTARY - Selection of comparators**
The reason for the choice of the comparator (not using any specific intervention) is clear as it appears to represent current practice in the authors’ setting.

Validity of estimate of effectiveness:
The internal validity of the effectiveness results cannot be guaranteed due to the non-randomised nature of the study design, possible bias due to difference in treating physicians and the effects of unknown confounders (as acknowledged by the authors). The fact that, in this study, women with posterior pelvic pain and only a subtle lumbar back pain component were classified as having both pain types, was judged to enable the individualised treatment of even minor lumbar back pain in combination with a dominating posterior pelvic pain, and vice versa; this was deemed to be impossible if these patients were treated in groups. This patient classification was conjectured to explain the difference in pain type incidence between this study and the literature. Although the study groups were comparable in terms of several important background variables; the authors considered that, in view of the non-randomised nature of the study design, it was likely that the effects of unknown confounders would not have been nullified.

**Validity of estimate of measure of benefit**
Estimation of benefit was obtained directly from the effectiveness analysis. The reduction in sick leave was the implicit benefit measure.
Validity of estimate of costs
Quantities were reported separately from the costs in general categories. Statistical analysis was not performed on the resource use data. Adequate details of methods of cost estimation were not given (the cost structure was not broken down in detail). Given the perspective adopted, it is not clear whether any important cost items were omitted from the analysis. Statistical analysis of costs was not performed. Cost results may not be generalisable to other settings.

Other issues
The authors’ conclusion appears to be justified given uncertainties in the data. The issue of generalisability to other settings or countries was not addressed. Appropriate comparisons were made with other studies; it was concluded that the sick leave pattern in the control group was similar to the pattern in several other studies of sick leave during pregnancy in Scandinavia. The authors may have presented their results selectively since the pain intensity results for the control group were not reported.

Source of funding
Grant from the Alvsborg Social Insurance Office.

Bibliographic details

PubMedID
9322326

Indexing Status
Subject indexing assigned by NLM

MeSH
Cohort Studies; Female; Humans; Low Back Pain /economics /rehabilitation; Pain Measurement; Pelvic Pain /economics /rehabilitation; Physical Therapy Modalities; Pregnancy; Pregnancy Complications; Sick Leave /economics

AccessionNumber
21997001319

Date bibliographic record published
30/11/2000

Date abstract record published
30/11/2000