LOW BACK PAIN IN LONG-TERM PERSPECTIVE AMONG EMPLOYEES

- A cohort study with 5-, 10-, and 28-year follow-up

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LOW BACK PAIN (LBP)

- Very common symptom among adult population
- One-year prevalence vary between 22% and 65% (Walker, 2000)
- In a Finnish nationally representative sample in 2000, approximately 80% of persons aged 30 years or more reported having suffered from LBP at least once in their lifetime and 30% during the past month (Riihimäki et al., 2002)
- The incidence of LBP is highest at working age and decreased thereafter (van Tulder et al., 2002)
LBP (2)

- The natural course of LBP is not well known
- Acute LBP generally settles within weeks but recurrences and chronicity are common
- Severe acute low back pain with radiating symptoms is associated with chronicity
- The frequency and intensity of pain can fluctuate with time
AIM OF THE STUDY

To investigate

1. The incidence, prevalence and
2. the persistence of local and radiating LBP among employees in the engineering industry over a 28-year follow-up period
Material and Methods

- A prospective cohort study
  - The cohort consisted of employees of four metal factories, aged 17-65 years
- A systematic, non-proportional stratified sample of 902 subjects was drawn in strata by age, gender and occupational class
- The data were gathered by questionnaire
- LBP was categorized as:
  - No LBP
  - Local LBP
  - LBP with a radiating pain component (Radiating LBP)
Baseline in 1973 (n 902)

Follow-up 1 in 1978 (n 748)

Follow-up 2 in 1983 (n 654)

Follow-up 3 in 2000 (n 546)

Dead (n 232)
The incidence and persistence of LBP was examined with cross-tabulations of the LBP variables at baseline and those obtained in the different follow-up surveys.

Logistic regression with the categorical covariates age, gender, and occupational class was used to estimate the interdependence of LBP occurrence at the surveys.
RESULTS: Incident LBP

- The proportion of subjects with new reports of LBP increased during the follow-ups
  - Of those who did not have local LBP at baseline, 33%, 37%, and 64% reported pain in 1978, 1983 and 2000
  - Of those free of radiating pain at baseline, 17%, 22%, and 46% had such pain in 1978, 1983, and 2000
RESULTS: Chronic or recurrent LBP

- At baseline, 54% of the subjects reported local LBP and 25% radiating LBP
- The persistence of LBP reporting was high over the follow-up period
  - Local LBP: 75%, 73%, and 88% were symptomatic in 1978, 1983 and 2000, respectively
  - Radiating LBP: 66%, 65%, and 69%
Local and radiating LBP at baseline as a predictor of similar pain over the follow-up period

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<th>Crude</th>
<th>Adjusted for age, gender and occupational class</th>
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<tr>
<td></td>
<td>OR</td>
<td>95 % CI</td>
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<tr>
<td><strong>Local LBP</strong></td>
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<tr>
<td>5-year (n=748)</td>
<td>6.3</td>
<td>4.6-8.6</td>
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<td>10-year (n=654)</td>
<td>4.6</td>
<td>3.3-6.4</td>
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<td>28-year (n=546)</td>
<td>4.1</td>
<td>2.7-6.4</td>
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<td><strong>Radiating LBP</strong></td>
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<tr>
<td>5-year (n=746)</td>
<td>9.4</td>
<td>6.5-13.6</td>
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<tr>
<td>10-year (n=654)</td>
<td>6.9</td>
<td>4.6-10.1</td>
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<tr>
<td>28-year (n=546)</td>
<td>2.6</td>
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CONCLUSION

- Prevalence of radiating LBP increased with age
- The persistence of local LBP was high
  - A previous episode of LBP is an important predictive factor for the development of a new episode (Croft et al., 1998; Müller et al., 1999; Thomas et al., 1999)
- Radiating pain at baseline predicted strongly the occurrence of such pain at the 5- and 10-year follow-ups
  - By the year 2000 the odds ratio for radiating LBP dropped to around 2, when that for local LBP remained around 4
    - There were higher increase in the occurrence of radiating pain compared with local pain towards the end of the follow-up period
Methodological considerations

- Because of the length of the follow-up, there was a sizeable loss of subjects due to death
  - The survivor cohort was then younger and healthier than the original sample
- Other non-participation was relatively limited and the participation rates among the survivors remained good
  - 84%, 76% and 81% at the 5-, 10- and 28-year follow-ups, respectively
- A limitation of the data is the time-reference (the previous 12 months) in the questions on LBP, relative to the follow-up intervals.
  - It was not possible for us to study the exact incidence or natural history of LBP
Main findings

- Over the three decades LBP still continues to be a common disorder among adults
- Adequate or effective therapy is still missing at large
Methodological considerations

- There were some differences in participation between genders and occupational classes at the follow-ups
  - The loss of women was smaller than the loss of men in every survey
  - The participation rates were higher among white-collar employees than among blue-collar employees at the 10- and 28-year follow-ups.
- A limitation of the data is the time-reference (the previous 12 months) in the questions on LBP, relative to the follow-up intervals.
  - It was not possible for us to study the exact incidence or natural history of LBP