SCREENING FOR LEAD POISONING IN A SUBURBAN PRACTICE

TITLE: Prevalence of lead poisoning in a suburban practice
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JOURNAL: *The Journal of Family Practice*
DATE: July 1995; Volume 41:65–71.

Clinical question. How sensitive are quick screening questions in identifying children at risk for lead toxicity?

Background. The Centers for Disease Control and Prevention (CDC) has recommended universal screening for lead toxicity for children between the ages of 12 and 36 months, but many clinicians have not adopted this strategy. Reasons for this resistance include the impression that many populations are at low risk for lead toxicity, concerns related to the cost and discomfort of testing, and skepticism about the benefit of treatment for patients with borderline blood lead levels. This study assesses the prevalence of elevated blood lead levels in a suburban population and evaluates the effectiveness of simple questions in defining children at high risk for lead toxicity.

Population studied. The study population included 232 patients between the ages of 1 and 3 years who presented to primary care practices in a suburb of Toledo, Ohio. A questionnaire was completed and blood lead testing conducted for each of the patients. Among this group, 82% were white, 3% African American, and 7% Hispanic. Approximately 40% came from families with a total annual income below $20,000, and 35% from families with a total annual income between $20,000 and $40,000. No information was given about insurance coverage, parents' occupations, differences between these patients and those in the surrounding community, or the numbers or characteristics of those refusing participation. It is therefore difficult for a clinician to compare the risk of lead toxicity in this population with that of his or her own patients.

Study design and validity. Studies of screening tests are worth reading only if everyone who is screened gets the standard test. In this case, the questions on the questionnaire comprise the screening test being evaluated; all children underwent the gold standard test, ie, blood lead levels. The questionnaire incorporated the five screening questions developed by the CDC and an additional one regarding the age of the patient's home. Parents were allowed to respond "don't know" to any question, which is clinically realistic. Given the relatively small number of patients with elevated blood lead levels, there may be significant imprecision in the estimates of sensitivity and other test measurements. Confidence intervals would be helpful.

Outcomes measures. An elevated blood level was defined as ≥10 μg/dL. This is currently the standard value, although there is some controversy about the harmful effects of levels between 10 μg/dL and 15 μg/dL. The blood lead testing laboratory seems appropriate. Little information is given about the details of blood collection, particularly for fingerstick samples, despite some controversy about the validity of fingerstick samples. Sensitivity and specificity for specific questions and groups of questions were calculated.

Results. An elevated blood lead level was found in 13 children. Taken as a group and considering any positive response to be significant, the CDC questions with forced yes or no responses had a sensitivity of 77% and a specificity of 64%, with an approximate predictive value of 11%. In contrast, the single question "Was your house built before 1960?" had a sensitivity of 92%, a specificity of 57%, and a positive predictive value (PPV) of about 11% ("don't know" responses were grouped with positive responses, indicating a need for screening). A PPV of 11% indicates that of 9 patients whose houses were built before 1960 or who do not know the age of their houses, approximately 1 will have an elevated blood lead level and 8 will have normal blood lead levels; ie, 8 of the 9 will have a frightening and painful blood draw that is unnecessary.

Recommendations for clinical practice. Asking patients, "Was your house built before 1960?" and assuming that all who do not know are at risk, is a simple screening tool that effectively selects patients at high risk for lead toxicity. In this study, this question identified 12 of the 13 children in a sample of 232 who had elevated blood lead levels. In practice, I would also ask about any house the child stays in regularly. The 5 CDC questions, which may be cumbersome in a short visit, were no more effective at identifying children who would benefit from blood lead testing. What is not provided in this report—more detailed description about the patients, better estimates of the precision of the estimates for sensitivity and the positive pre-

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ISSN 0094-3509

dictive value—is important, but these results are useful until more information becomes available. Final decisions about screening for lead toxicity will depend on further evidence of the effectiveness of treatment, particularly for blood levels between 10 μg/dL and 15 μg/dL, and the prevalence of elevated blood levels in a particular community.

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BED REST, EXERCISES, OR ORDINARY ACTIVITY FOR ACUTE LOW BACK PAIN?

TITLE: The treatment of acute low back pain: bed rest, exercises or ordinary activity?
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JOURNAL: *The New England Journal of Medicine*
DATE: February 9, 1995; Volume 332:351–5.

Clinical question. Should we recommend bed rest, back exercises, or ordinary activity for patients with acute low back pain?

Background. Acute low back pain is extremely common in primary care practice, but what constitutes appropriate first-contact treatment is still unclear. Traditionally, primary care physicians have excluded neuropathy and serious disease, then treated nonspecifically with analgesics, bed rest, and/or a variety of back exercises. This study compares bed rest, back exercises, and ordinary activities.

Population studied. The study population consisted of 186 Helsinki city employees who presented to the city's occupational health centers with either acute low back pain or an exacerbation of chronic back pain lasting less than 3 weeks. All city employees were eligible, but those with neurologic deficits, pregnancy, fracture of the lumbar spine, or urinary tract disease were excluded. No information is available on the patients who refused to participate in the trial.

From a clinical perspective, these patients seem to be relatively similar to those we see, with relatively uncomplicated back pain of recent onset. Presumably, most have work-related injuries. Under the American system of workers' compensation, work-related injuries are a risk factor for chronicity. We do not know whether the same is true in Finland. In any case, the randomization process would probably control for this and other unmeasured potentially confounding variables. The lack of information on people refusing to participate in the study may be important because there may be some systematic differences between people entering the study and those staying out.

Study design and validity. The subjects were randomized to three types of advice: (1) 2 days of bed rest, with only essential walking, (2) written instruction in back extension and lateral bending exercises to be performed every 2 hours during the day until the pain subsided, together with a visit to a physical therapist, and (3) avoidance of bed rest and continuation of routine activity. Randomization succeeded in defining three groups with similar ages, sex ratio, body mass index, duration of pain, and disability. Over 90% of each group was treated with anti-inflammatory drugs or analgesics. All patients were reexamined by a physical therapist at 3 and 12 weeks and were given questionnaires to complete. This information was obtained from the medical record in which sick leave is recorded, as required by law. Patients who did not return for reexamination were contacted by telephone. To minimize bias of evaluators, patients reported their own symptoms and, at the beginning of the study, the staff were surveyed for their views about treatment.

This was a well-done study. The treatment arms reflect realistic options in our offices, although the specifics of exercise vary from physician to physician. A randomized trial is the best way to compare treatments, and follow-up is very good. Blinding was not possible in this study, but the authors made a sufficient attempt to address that and other potential biases.

Outcomes measured. The principal outcomes were duration of sick leave, patient report of the characteristics of pain, quality of life and functional assessment, physical examination, patient satisfaction, and cost of care at both 3 and 12 weeks.

Results. Randomization succeeded in identifying three similar groups. Patients advised to get back to their routine activity as soon as possible had significantly fewer sick days than did either of the other groups at both 3 and 12 weeks. The active group lost 4.7 days from work as compared with 7.2 days for the exercise group and 9.2 days for the bed-rest group. Although the total number of days away from work for all groups seems higher than American norms, the reduction in sick leave in the control group is clinically as well as statistically significant. At 3 weeks, there was also a nonsignificant trend toward less duration and intensity of pain, less disability, and higher quality of life in the control group, but at 12 weeks, there were no differences in these variables. Evaluator bias did not parallel these results, thus strengthening the finding. Patients in all groups were equally satisfied with treatment, and although there was a tendency for the control group to