POEMs

Patient-Oriented Evidence that Matters

Each month, the POEMs editorial team reviews more than 90 journals of interest to primary care physicians, identifying the articles you have to know about to stay up to date. We call these articles POEMs (Patient-Oriented Evidence that Matters) because they deal with common primary care problems, report outcomes that matter to patients, and have the potential to change the way we practice. The eight most important articles are critically appraised each month by a team of more than 50 reviewers who make a recommendation for clinical practice. The collected reviews of the POEMs are available at the Journal's World Wide Web site at http://jfp.msu.edu

Lowering the Rate of Antibiotic Resistance

Reference Seppala H, Klaukka T, Vuopio-Varkila J, et al. The effect of changes in the consumption of macrolide antibiotics on erythromycin resistance in group A streptococci in Finland. N Engl J Med 1997; 337:441-6.

Clinical question **Can the rate of group A streptococci resistance to erythromycin be lowered by decreasing nationwide consumption of macrolide antibiotics?**

Background Erythromycin is a standard antibiotic for the treatment of infections caused by group A streptococci. During the late 1980s macrolide use in Finland tripled, and between 1988 and 1990 Finland experienced a nationwide increase (from 5% to 13%) in erythromycin-resistant group A streptococci. Because it was felt that increased use led to increased resistance, national recommendations were made to restrict the use of macrolide antibiotics. This study investigated the impact of decreased macrolide use on the resistance rates of group A streptococci.

Population studied This was a population-based study in Finland.

Study design and validity Recommendations to reduce the use of macrolides were issued in 1991 and 1992, and received wide attention and support from physicians and specialty groups. Information on the nationwide consumption of macrolide antibiotics was obtained from Finnish Statistics on Medicines 1995. Consumption was defined as daily doses per 1000 inhabitants per day. From 1991 to 1996 the Finnish Study Group for Antimicrobial Resistance collected 39,247 isolates of group A streptoccoci from 26 regional laboratories. Using the disk-diffusion or screening-plate methods, the isolates were determined to be susceptible or resistant to erythromycin. Erythromycin resistance was defined as a minimal inhibitory concentration of >1 µg/mL. These are reasonable and standard protocols for the determination of macrolide resistance.

Outcomes measured Primary outcomes were the consumption of macrolide antibiotics (doses/1000 people/day) and the resistance rate of group A streptococci to erythromycin during the period from 1991 to 1996.

Results The consumption of macrolides decreased from nearly 3 daily doses per 1000 people per day in 1988 to 1.38 doses/1000/day in 1992 (P <.02); recommendations to limit macrolide use were issued in late 1991 and early 1992. Since 1993, yearly consumption rates have ranged from 1.28 to 1.74 doses/1000/day. Group A streptoccoci resistance to erythromycin reached a maximum of 19.0% in 1993, and by 1996 had dropped to 8.6%. This trend was statistically significant.

Recommendations for clinical practice **This study indicates that decreased use of macrolides in Finland resulted in decreased erythromycin resistance. Similar results have been observed in Japan and in the hospital setting in the United States, albeit on a smaller scale. Group A streptoccoci resistance rates, while increasing in foreign countries, have not increased significantly in the United States. With erythromycin resistance rates at approximately 5% and no clinically acquired penicillin-resistant cases documented, treatment here is usually straightforward.[1] As with all antibiotic use, a conservative prescribing approach that stresses patient compliance is prudent enough a measure to prevent increased resistance. The authors noted an increase in the use of newer macrolides such as clarithromycin (Biaxin) and azithromycin (Zithromax) since 1991 in Finland. This is of concern since cross-resistance among the macrolides is the rule and the use of these medications has also increased significantly in the United States. These results demonstrate that prescribing guidelines can change physician behavior, and provide some optimism that these methods can help us manage emerging patterns of resistance for other types of bacteria.**

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REFERENCE

1. Kaplan EL. Recent evaluation of antimicrobial resistance in beta-hemolytic streptococci. Clin Infect Dis 1997; 24(suppl 1):S89-92.

INDUCIBLE ISCHEMIA AFTER MI

Reference Madsen JK, Grande P, Saunamaki K, et al. Danish multicenter randomized study of invasive versus conservative treatment in patients with inducible ischemia after thrombolysis in acute myocardial infarction (DANAMI). Circulation 1997; 96:748-55.

Clinical question **After a first acute myocardial infarction (AMI), should patients with inducible ischemia after thrombolysis undergo revascularization?**

Background Thrombolysis improves survival of patients with AMI. In spite of thrombolysis, however, many patients have persistent or recurrent ischemia. Reports examining early percutaneous transluminal coronary angioplasty (PTCA) after AMI have failed to show improved morbidity or mortality. Other trials have shown a benefit of invasive treatment in patients with unstable angina or silent inducible ischemia who have not yet had an AMI. This study addressed the potential benefits of delayed revascularization after thrombolysis.

Population studied Participants were 24 to 69 years of age, mostly male (80%), with AMI and post-infarct ischemia, and admitted to one of 43 participating hospitals in Denmark. Patients were excluded if they had a history of a previous AMI, PTCA, or coronary artery bypass grafting (CABG), or if they had significant noncoronary disease. Patients were also excluded if thrombolysis was given more than 12 hours after symptom onset, less than half of the thrombolytic dose was received, resting ECG abnormalities precluded identification of ST segment changes during the exercise treadmill test (ETT), or blood pressure dropped during ETT.

The authors estimated that only 8% of patients admitted with AMI actually met study inclusion criteria. Recruitment was not consecutive, and thus the study population was highly selected and potentially biased.

Study design and validity This was a multicenter, randomized, prospective study. All patients underwent an ETT at the time of discharge from the hospitalization for AMI. Post-infarction ischemia was defined as spontaneous or treadmill-induced angina or ST changes compatible with ischemia on treadmill. Medical management was chosen by the patients' individual physicians. In both study arms patients were treated with 150 mg of aspirin daily unless contraindicated. Only 40% of patients received beta-blockers. Analysis was based on intention to treat. Eighteen percent of patients in the invasive arm did not receive revascularization, while 1.6% in the conservative arm had revascularization by 2 months and 15% by 1 year.

Outcomes measured Primary endpoints were death, reinfarction, and unstable angina. Secondary endpoints were stable angina and anti-ischemic medical treatment. The study did not address patient preference, functional status, or cost of treatment.

Results A total of 1008 patients were enrolled from 1990 to 1994. The groups did not differ at time of entry with respect to comorbidity, type of AMI, or type of inducible ischemia. Thirty-six percent of all revascularizations were CABG. Median time to CABG was 38 days vs 18 days for PTCA.

No significant difference in mortality was seen between revascularization and medical management (P=.45). Invasive treatment reduced the risk of reinfarction (P=.0038) and unstable angina (P <.00001). The absolute risk difference for all primary endpoints 4 years from study entry was 12% (44% vs 32%), which means that eight patients needed to be treated with PTCA or CABG for one patient to avoid readmission for unstable angina or reinfarction.

Recommendations for clinical practice **Delayed invasive therapy after thrombolysis for AMI in a highly selected population reduces the likelihood of developing unstable angina and reinfarction. However, mortality, the ultimate endpoint, was not changed. Other important patient-oriented outcomes and cost were not addressed. The medical management of the conservative arm in this trial was less than optimal, and a more aggressive approach might have narrowed the difference between treatment groups. An accompanying editorial comments that clinical practice in the United States often includes empiric angiography after AMI with subsequent PTCA to appropriate vessels, despite data that fail to support PTCA after thrombolysis.**[1]

In summary, this study and others do not provide firm evidence to support aggressive revascularization after thrombolysis for AMI. Until there is good evidence that patient-oriented outcomes are improved by these interventions at an acceptable cost, the standard of care should be based on optimal, evidence-based medical management and considerations of patient preference.

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REFERENCE

1. Guetta V, Topol EJ. Pacifying the infarct vessel. Circulation 1997; 96:713-5.

Detecting Depression with Two Questions

Reference Whooley MA, Avins AL, Miranda J, Browner WS. Case-finding instruments for depression. J Gen Intern Med 1997; 12:439-45.

Clinical question **How sensitive are simple clinical questions in identifying patients with depression?**

Background Detection of depression is a major problem in primary care. While 5% to 18% of all primary care patients have depression, up to 50% remain unrecognized, and well-known tools such as the Beck Depression Inventory are difficult to integrate into busy office practice. The purpose of this study was to evaluate the effectiveness of two simple clinical questions as a diagnostic test for depression.

Population studied The authors studied 675 consecutive patients presenting to a VA urgent care clinic. After refusal (n=74), exclusion because of mania or schizophrenia (n=47), or other reasons (n=18), a total of 536 subjects remained. Among participants, 97% were male; 55% were white, 29% African American, and 8% Latino; and a large majority were unemployed and had low incomes. The population was thus distinctly different from many primary care practices. The results can most easily be generalized to indigent populations, including those of color, while the absence of women may limit the generalizability of the results. Even with these reservations, though, it seems likely that clinical questions about depression will perform similarly in more affluent populations and in women.

Study design and validity All subjects received a written questionnaire composed of demographics and two questions: "During the past month, have you often been bothered by feeling down, depressed, or hopeless?" and "During the past month, have you often been bothered by little interest or pleasure in doing things?" A positive response to either question was considered a positive test. Subjects were also given the NIMH Quick Diagnostic Interview Schedule (QDIS) as the criterion standard for diagnosing major depression and six other common case-finding instruments, including the CES Depression Scale (CES=D), the Beck Depression Inventory, the Medical Outcomes Study Depression (MOS-D) measure, and the Symptom-Driven Diagnostic System for Primary Care.

The methodology was strong: the sample size was large and enrolled consecutively. The usual criterion test for the diagnosis of depression is the judgment of an experienced psychiatrist, but the QDIS is a reasonable alternative and was applied consistently. The clinical questions being evaluated were presented in written form, rather than the oral form most clinicians would use, but it seems unlikely that this format difference would have a large impact on test performance.

Outcomes measured The sensitivity, specificity, and likelihood ratios for diagnosing major depression were determined for each instrument; receiver operator curves were used to compare instruments. The prevalence of depression was estimated with the QDIS, and compared with the judgment of clinicians, as measured by a blinded chart review.

Results The prevalence of major depression as determined by the QDIS was 18.1%; only 8.8% of participants were identified as depressed by their clinic providers, suggesting the potential for improved detection of depression with the regular use of a case-finding instrument. The two-question instrument was 96% sensitive (95% CI, 90% to 99%) and 57% specific (95% CI, 53% to 62%) with a negative likelihood ratio (LR) of 0.07 and a positive LR of 2.2 for detecting major depression. The performance of the other instruments was very similar, although the more complex MOS-D and CES-D instruments were slightly more specific. When 175 participants with concurrent substance abuse were excluded, the two questions showed a similar degree of sensitivity (96%), but increased specificity (66%).

Recommendations for clinical practice **This report provides strong evidence that two simple clinical questions ("During the past month, have you often been bothered by feeling down, depressed, or hopeless?" and "During the past month, have you often been bothered by little interest or pleasure in doing things?") are a sensitive and quick method of detecting patients with major depression. Given the low negative likelihood ratio, the major clinical value of this tool is to exclude depression. This is consistent with the mnemonic "SnNOut": a very sensitive test, when negative, rules out disease. A positive response to one of these questions should not be considered diagnostic, but needs confirmation with a more thorough investigation of depressive symptoms. Finally, you should keep in mind that the benefit of early detection of depression remains unproved, so routine incorporation of this instrument into all annual examinations is premature.**

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Management of Gestational Diabetes

Reference Garner P, Okun N, Keely E, et al. A randomized controlled trial of strict glycemic control and tertiary level obstetric care in the management of gestational diabetes: A pilot study. Am J Obstet Gynecol 1997; 177:190-5.

Clinical question **Is the treatment of gestational diabetes beneficial to mothers and their neonates?**

Background Gestational diabetes mellitus (GDM) complicates approximately 3% of pregnancies. Although evidence suggests that insulin treatment can reduce fetal macrosomia, controversies remain concerning the best definition of GDM, screening strategies, patient-oriented adverse outcomes associated with GDM, and whether treatment has an effect on them.[1]

Population studied A total of 300 pregnant women with a diagnosis of GDM between 24 and 32 weeks' gestation at two teaching hospitals from the University of Ottawa were studied. Exclusion criteria included multiple gestation, maternal disease, known anomalies, obstetrical complications, and long-term medical therapy affecting glucose metabolism.

Study design and validity This was a prospective, randomized, controlled pilot study specifically looking at patient acceptance, recruitment rates, and detection of any major adverse outcomes in the control group. The authors note that this study was not designed to have sufficient power to detect clinically significant differences in the outcomes measured.

GDM was diagnosed by screening methods reflecting the World Health Organization recommendations, but differing from the usual methods used in the United States.[2] Patients in the control group received routine dietary recommendations and obstetrical care. Twice-weekly capillary blood glucose levels were monitored by an independent observer. Control patients noted to have persistent fasting glucose levels >140 mg/dL or 1-hour postprandial levels >200 mg/dL were transferred to the treatment arm because of the concern of having undetected type 1 or type 2 diabetes. Analysis of the data was by intention to treat.

Patients in the treatment group were placed on a calorie-restricted diet and followed by an obstetrician and endocrinologist in a tertiary care setting. If the treatment objectives of a fasting glucose level <80 mg/dL and a 1-hour postprandial level <140 mg/dL were not achieved, insulin supplementation was added. These treatment objectives differ slightly from those recommended by the American College of Obstetricians and Gynecologists. The two groups looked similar by demographic data and diabetic risk factors, but no reference to ethnic makeup was noted.

Outcomes measured The primary outcome was macrosomia defined as birthweight >4500 g. Other outcomes measured included fetal or maternal deaths, congenital anomalies, neonatal hypoglycemia, neonatal hypocalcemia, neonatal hyperbilirubinemia, mode of delivery, and birth trauma.

Results There were no statistically significant differences reported in maternal and fetal outcomes between the treatment and control groups. Although the treatment group achieved statistically significant improvements in glycemic control compared with the control group, the difference in mean birthweight (107 g greater in the control group) was not statistically significant (P=.12) even when corrected for gestational age. Sixteen of the 150 (11%) patients in the control group were later defined as failed controls and were transferred to the treatment arm. Six infants in each group weighed >4500 g. Operative delivery rates were similar in each group and no adverse outcomes were noted.

Recommendations for clinical practice **Intensive treatment of GDM has not been proved to provide any patient-oriented benefits. Other trials have demonstrated an increase in potentially harmful interventions in women identified with GDM. It is hoped that large-scale multicenter trials from both the United States and elsewhere can help determine whether clinicians should continue screening for GDM.**

Recent recommendations suggest that screening should be based only on maternal risk factors.[1-3] Women at low risk, where screening is unlikely to be beneficial, include those less than 25 years of age, with normal body weight, no first-degree relatives with diabetes, and not members of an ethnic or racial group with a high prevalence of diabetes.

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REFERENCES

1. US Preventive Services Task Force. Guide to clinical preventive services. 2nd ed. Baltimore, Md: Williams & Wilkins, 1996:193-208.
2. Diabetes and Pregnancy. ACOG Tech Bull No. 200, December 1994.
3. Report of the Expert Committee on the Diagnosis and Classification of Diabetes Mellitus. Diabetes Care 1997; 20:1183-97.

Education to Prevent Low Back Injuries

Reference Daltroy LH, Iversen MD, Larson MG, et al. A controlled trial of an educational program to prevent low back injuries. N Engl J Med 1997; 37:322-8.

Clinical question **Is participation in an educational program effective in the primary prevention of low back injuries?**

Background Low back pain affects most adults at some time, with many injuries occurring at work. Estimates of total costs for low back injuries, including disability, exceed $56 billion per year. "Back schools" have been developed in an effort to prevent injury and decrease these costs. Although "back schools" have been shown to reduce back pain and the number of days lost from work in previous studies, they have not been shown to reduce injury rates. Prior studies have been criticized for their small sample size, volunteer bias, and the use of subjects with a history of low back pain.

Population studied Approximately 4000 US Postal Service workers were studied at two mail-processing facilities. The average age was 43 and 75% were male. Participants included both mail handlers doing heavy lifting (35- to 70-lb bags) and clerks doing light work (mail sorting).

Study design and validity This was a randomized controlled trial of an educational program to prevent work-associated low back injuries. The employees were grouped into pairs of "work units" matched by craft and job characteristics. Both groups underwent standard Postal Service low back safety training (a film) as well as periodic safety talks. In addition, the intervention group was taught work-safety principles by experienced physical therapists, including instruction in safe lifting and handling, posture, pain management, stretching and strengthening, group discussions on barriers to implementation, and work-station ergonomic analysis. The program was reinforced 3 to 4 times in the succeeding years. Injured subjects from both groups were randomized a second time to receive either training or no training after their return to work. The occurrence of a back injury was determined using workers' compensation claims and Postal Service accident reports.

The groups were similar at baseline regarding their age, sex, craft category, and duration of employment. There was no report of other potentially important determinants of outcome, such as smoking status, obesity, job satisfaction, or previous back injury. The groups were analyzed in their assigned work units (intention to treat). The main difficulty in this study was not in design, but implementation. Transfers created contamination of both groups, with 61% of the intervention group and 8% of the control group receiving training during the 5.5 years. This reflects the difficulty of doing research in the industrial as opposed to the clinical setting. The results, however, are likely to reflect what is truly occurring in industry and are therefore generalizable.

Outcomes measured The primary outcome was the initial occurrence of low back injury. Secondary outcomes included the rates of subsequent low back injury, other musculoskeletal injuries, cost, time off, time until further injury, and safety knowledge.

Results During the study period, 2534 workers and 134 supervisors were trained in low back injury prevention and 360 workers reported low back injuries (21.2 per 1000 worker-years of exposure). After return to work, 75 workers were reinjured. Most low back injuries were diagnosed as acute low back pain or strain. This program did not decrease the rate of low back injury, median cost per injury, time off from work per injury, rate of other musculoskeletal injuries, or rate of repeated injury after return to work. Mail handlers were more likely than clerks to sustain a low back injury (rate ratio 1.24; 95% CI, 1.01 to 1.53), but training did not reduce the likelihood of injury (rate ratio 1.15; 95% CI, 0.93 to 1.41). While there was a trend toward the intervention-group units having a higher injury rate than the control units (rate ratio 1.11; 95% CI, 0.90 to 1.37), this may have represented a reporting bias. Only the subjects' knowledge of safe behavior was increased by the training.

Recommendations for clinical practice **This study provides further evidence that comprehensive educational programs designed to reduce the occurrence of low back injuries are not effective. We would not recommend the use of "back schools" to prevent low back injuries. Greater long-term benefit might be achieved by focusing less on the low back and more on other strategies such as weight loss, smoking cessation, regular exercise, and stress reduction. Although these strategies have not been directly shown to reduce low back injury either, they can be recommended for other health benefits, such as decreasing heart disease, hypertension, obesity, and diabetes.**

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Treating Acute Coronary Insufficiency with Antibiotics

Reference Gurfinkel E, Bozovich G, Daroca A, Beck E, Mauntner B, for the ROXIS Study Group. Randomised trial of roxithromycin in non-Q-wave coronary syndromes: ROXIS pilot study. Lancet 1997; 350:404-7.

Clinical question **Are antibiotics effective in the management of acute coronary syndromes?**

Background Serologic evidence has suggested an association between *Chlamydia pneumoniae* infection and coronary heart disease (CHD). *C pneumoniae* has been detected in atherosclerotic plaques and chronic infection may play a role in the pathophysiology of CHD. The current study evaluates the active treatment of this infection with an antichlamydial antibiotic in patients with non-Q-wave coronary syndromes.

Population studied The study population consisted of 202 patients from eight coronary-care units in Argentina. All patients met criteria for unstable angina or non-Q-wave myocardial infarction. The mean age of participating patients was 61 years, and 74% were male. Exclusion criteria included evidence of an evolving Q-wave myocardial infarction, left bundle-branch block, congestive heart failure, or known contradindications to macrolide therapy.

Study design and validity The study was a randomized, double-blind, prospective, multicenter, placebo-controlled trial. A total of 205 patients with unstable angina or non-Q-wave myocardial infarction were recruited into the trial, of whom 202 met the inclusion criteria. Patients were randomized to receive either roxithromycin, a macrolide antibiotic, 150 mg orally twice a day, or matched placebo. There were no significant differences between the two groups with regard to age, sex, aspirin use, and baseline cardiac history. All patients received daily aspirin, intravenous nitrates, and unfractionated heparin for a minimum of 72 hours. Patients were included in the analysis if they completed at least 72 hours of antibiotics. All together, 63 (63%) patients from the placebo group and 66 (65%) from the treatment group completed a 30-day course of antibiotics. Patients failing to complete the study protocol included those withdrawn because of the need for coronary artery bypass grafting, poor compliance, or need for antibiotics. Follow-up visits were scheduled at day 31, day 90, and 6 months after the start of the study treatment.

This study was designed as a pilot study. Approximately 4000 patients would have been needed to generate an 80% statistical power to truly detect significant clinical differences.

Outcomes measured The study looked at three clinically relevant outcomes: recurrent angina, acute myocardial infarction, and death. They also looked at a double endpoint (myocardial infarction and death) and triple endpoint (all three outcomes).

Results Using intention-to-treat analysis, a statistically significant reduction in the primary composite triple endpoint rates was observed in the antibiotic group (2% vs 9%, P=.032). For the individual outcomes, nonsignificant reductions were reported with antibiotic treatment in the rate of severe recurrent ischemia (1.1% vs 5.4% , number needed to treat [NNT] = 23), myocardial infarction (0% vs 2.2%, NNT = 45), and ischemic death (0% vs 2.2%, NNT = 45). No major drug-related adverse events were reported.

Recommendations for clinical practice **The results of this pilot study support the role of using antibiotic treatment in the management of patients with acute coronary insufficiency syndromes. It is unclear if these results can be duplicated in other settings and whether other macrolide antibiotics will provide similar benefit. This information does not dictate a change in current management of non-Q-wave coronary syndromes as yet, as the sample size was too small to determine whether a true difference between treatment and placebo exists. Larger follow-up trials are needed and therefore bear close watching. Might another major icon fall? Antibiotics for peptic ulcer disease and now for coronary artery disease!**

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Microalbuminuria and Mortality in Type 2 Diabetes

Reference Dineen SF, Gerstein HC. The association of microalbuminuria and mortality in non-insulin-dependent diabetes mellitus: a systematic overview. Arch Intern Med 1997; 157:1413-18.

Clinical question **Is the presence of microalbuminuria a marker for mortality in patients with type 2 diabetes mellitus?**

Background In the 1960s, newer assay techniques allowed the detection of low concentrations of urinary albumin excretion. Microalbuminuria is defined as a rate of albumin excretion of 0.03 to 0.3g per day. Since the 1980s, several authors have reported adverse risk associated with microalbuminuria in both type 1 and type 2 diabetes, but these studies have not been critically analyzed.

Population studied The authors evaluated 11 English-language papers. These papers were all

European cohort studies: In seven, the subjects were from diabetes clinics or hospital-based practices; four were from general medical practices or community settings.

Study design and validity This is a systematic overview. The authors conducted a MEDLINE search for English-language papers. They supplemented their search with a limited search of the *Science Citations Index* and by reviewing the bibliographies of relevant papers. They also contacted researchers for additional papers. Unlike the work of the Cochrane Collaboration, these authors did not include foreign language references. They identified 271 citations, of which 15 met their criteria for inclusion (original research; included patients with type 2 diabetes; reported outcomes associated with microalbuminuria). Four papers were duplicate reports and were excluded, leaving 11 papers for study. The authors did not rate the quality of each study. When papers reported incomplete follow up, they assumed that the subject had microalbuminuria and survived; this is a conservative assumption and is appropriate.

Outcomes measured The primary outcomes reported were all-cause mortality and cardiovascular mortality.

Results The results were consistent across studies; each found that the presence of microalbuminuria was associated with increased all cause mortality and cardiovascular mortality. The confidence intervals for risk in each study were fairly wide (due to the small number of adverse events in each study). The pooled results demonstrated a significant association between microalbuminuria and all cause mortality (OR = 2.0; 95% CI 1.5 to 2.6) and cardiovascular mortality (OR = 2.0; 95% CI 1.4 to 2.7).

Recommendations for clinical practice **This overview demonstrates a consistent finding across studies: The presence of microalbuminuria is associated with increased (double the risk) mortality. It is unclear if the presence of microalbuminuria is merely a marker for increased risk or if it lies in the causal pathway. Since it is unclear if treating microalbuminuria in type 2 diabetes reduces this risk, it is unclear how useful this information is. Until it is demonstrated that treatment of microalbuminuria is effective in reducing mortality or improving quality of life in patients with type 2 diabetes, screening for its presence does not appear justified.**

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Trial of Labor with Prior Vertical Cesarean Incision

Reference Martin JN, Perry KG, Roberts WE, Meydrech EF. The case for trial of labor in the patient with a prior low-segment vertical cesarean incision. Am J Obstet Gynecol 1997; 177:144-48.

Clinical question **Is a trial of labor safe for women with a prior low-segment vertical cesarean incision?**

Background The concern with a trial of labor in patients with a prior cesarean section is the risk of uterine scar separation. Previous reports have verified the safety of vaginal birth after a cesarean (VBAC) in uncomplicated patients with low-segment transverse incision, and it has become the standard of care to offer a trial of labor to these patients. Assessing the safety of a trial of labor in women with a prior low-vertical cesarean incision has been difficult, since this type of incision is performed much less frequently. The current study reviewed the available literature regarding the safety of vaginal delivery after a prior low-segment vertical cesarean incision.

Population studied A review of the literature since 1981 identified ten reports from the published literature and one abstract presented to the Society of Perinatal Obstetrics. A cohort of 382 women were identified who underwent a trial of labor after a prior low-segment vertical cesarean section. No information is given regarding patient demographics.

Study design and validity The authors do not state what methods were used to locate relevant studies. It is uncertain to what extent publication bias would affect the results, but it is likely that case series reporting poor outcomes would more likely be published.

Outcomes measured Outcomes measured included the percentage of successful vaginal deliveries after a trial of labor, the number of uterine dehiscences and ruptures, and maternal and neonatal complications.

Results Successful VBAC occurred in 306 of the 382 patients (80%), which is comparable to the successful VBAC delivery rate in women with a prior low-segment transverse incision. Nine women (2.3%) had either a uterine dehiscence or rupture. Almost all of these events occurred in women who had more than one incision or had an incision that was extended during delivery. Only one of these breakdowns occurred in a single true low-segment vertical incision. All patients with uterine dehiscence were detected at the time of repeat cesarean

delivery. There were no associated permanent maternal or perinatal complications reported as a result of uterine dehiscence or rupture. Oxytocin and epidural analgesia were used without restriction during the labor trials.

Recommendations for clinical practice **The success rate for VBAC in patients with prior single low-segment vertical cesarean incision without extension is 70% to 80%, similar to the success rate in women with a standard transverse incision. The risk of uterine dehiscence or rupture in these women is less than 1%. Offering a trial of labor in pregnant women that meet these criteria is appropriate.**

Women with an extension of low-vertical incisions into the uterine fundus or those who have had both vertical and transverse incisions should be counseled not to undergo a trial of labor, since the risk of uterine rupture in this population ranges from 6% to 12%. Women with multiple prior low-vertical incisions have not been sufficiently studied to make clear recommendations regarding management. Many obstetrical providers believe it remains important to document the type of previous uterine incision before giving consent to a trial of labor. The likelihood that a classic uterine incision or an extended low-vertical incision was used for delivery is greater in association with cesarean delivery for extreme prematurity, abnormal neonatal position, or in women from selected foreign countries where the classic incision is more frequently used.

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