Complete Summary

GUIDELINE TITLE

Fetal macrosomia.

BIBLIOGRAPHIC SOURCE(S)

American College of Obstetricians and Gynecologists (ACOG). Fetal macrosomia. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2000 Nov. 11 p. (ACOG practice bulletin; no. 22). [94 references]

GUIDELINE STATUS

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This guideline updates a previous version: American College of Obstetricians and Gynecologists (ACOG). Fetal macrosomia. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 1991 Sep. (Technical Bulletin Number 159).

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SCOPE

DISEASE/CONDITION(S)

Fetal macrosomia and complications associated with macrosomia including:

- Maternal complications: risk of cesarean delivery, postpartum hemorrhage, vaginal lacerations, urinary tract infection, puerperal fever

- Fetal complications: shoulder dystocia, fracture of the clavicle, brachial plexus injury

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Risk Assessment

CLINICAL SPECIALTY

Endocrinology
Obstetrics and Gynecology

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

- To aid practitioners in making decisions about appropriate obstetric and gynecologic care
- To quantify risks of fetal macrosomia, address the accuracy and limitations of methods for estimating fetal weight, and suggest clinical management for the pregnancy with suspected fetal macrosomia

TARGET POPULATION

Pregnant women with and without diabetes with suspected fetal macrosomia

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis/Estimation of fetal weight

1. Assessment of maternal risk factors
2. Clinical examination
3. Ultrasound biometry or Leopold's maneuvers

Management

1. Individualized decisions regarding the optimal mode of delivery (vaginal or cesarean; induction of labor is not recommended) with fetal weights up to 5,000 g in the absence of maternal diabetes
2. Cesarean delivery with fetal weights greater than 5,000 g in women without diabetes and greater than 4,500 g in women with diabetes

Note: Diet and insulin therapy for pregnant women with gestational diabetes were considered but not recommended.

MAJOR OUTCOMES CONSIDERED

- Accuracy, sensitivity, specificity, and positive and negative predictive value of diagnostic tests for detection of macrosomia
- The clinical effectiveness of prophylactic cesarean delivery in women with suspected macrosomia
- The role of induction of labor in the management of term patients with macrosomia
- Cost-effectiveness of elective cesarean deliveries for suspected fetal macrosomia

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The MEDLINE database, the Cochrane Library, and American College of Obstetricians and Gynecologists' (ACOG's) own internal resources and documents were used to conduct a literature search to locate relevant articles published between January 1985 and May 1999. The search was restricted to articles published in the English language. Priority was given to articles reporting results of original research, although review articles and commentaries also were consulted. Abstracts of research presented at symposia and scientific conferences were not considered adequate for inclusion in this document.

Guidelines published by organizations or institutions such as the National Institutes of Health and the American College of Obstetricians and Gynecologists were reviewed, and additional studies were located by reviewing bibliographies of identified articles.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventive Services Task Force:

I Evidence obtained from at least one properly designed randomized controlled trial

II-1 Evidence obtained from well-designed controlled trials without randomization

II-2 Evidence obtained from well-designed cohort or case–control analytic studies, preferably from more than one center or research group

II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Analysis of available evidence was given priority in formulating recommendations. When reliable research was not available, expert opinions from obstetrician-gynecologists were used. See also the "Rating Scheme for the Strength of Recommendations" field regarding Grade C recommendations.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Based on the highest level of evidence found in the data, recommendations are provided and graded according to the following categories:

Level A — Recommendations are based on good and consistent scientific evidence.

Level B — Recommendations are based on limited or inconsistent scientific evidence.

Level C — Recommendations are based primarily on consensus and expert opinion.

COST ANALYSIS

A published case-control study of brachial plexus paralysis demonstrated that 51 cesarean deliveries would be needed to prevent one case of brachial plexus paralysis if the cutoff for cesarean delivery were 4,500 g among patients without diabetes. For a cutoff of 5,000 g, this number decreases to 19. Assuming persistent rates for brachial plexus impairment are between 5% and 22%, the authors suggest that to prevent a single permanent injury, the number of cesarean deliveries increases to between 233 and 1,026 for a birth weight cutoff of 4,500 g, and from 85 to 373 for a cutoff of 5,000 g.

In two previously published reports analyzing a policy of prophylactic cesarean delivery for macrosomia, which took into account the reported sensitivity and specificity of ultrasonography for the detection of macrosomia (4,500g), it was calculated that 3,695 cesarean deliveries would be required to prevent one permanent injury at a cost of $8.7 million for each injury avoided. For pregnancies complicated by diabetes, these figures will still be high at 443 cesarean deliveries to prevent a single permanent injury. In summary, because of the lack of well-designed and well-executed randomized clinical trials, a policy of prophylactic cesarean delivery for suspected fetal macrosomia less than 5,000 g may not be effective for pregnancies without diabetes. Furthermore, even for pregnancies complicated by diabetes, the cost-effectiveness of such a policy is doubtful.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Practice Bulletins are validated by two internal clinical review panels composed of practicing obstetrician-gynecologists, generalists and subspecialists. The final guidelines are also reviewed and approved by the American College of Obstetricians and Gynecologists (ACOG) Executive Board.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The grades of evidence (I-III) and levels of recommendations (A-C) are defined at the end of "Major Recommendations" field.

The following recommendation is based on good and consistent scientific evidence (Level A):

- The diagnosis of fetal macrosomia is imprecise. For suspected fetal macrosomia, the accuracy of estimated fetal weight using ultrasound biometry is no better than that obtained with clinical palpation (Leopold's maneuvers).

The following recommendations are based on limited or inconsistent scientific evidence (Level B):

- Suspected fetal macrosomia is not an indication for induction of labor, because induction does not improve maternal or fetal outcomes.
- Labor and vaginal delivery are not contraindicated for women with estimated fetal weights up to 5,000 g in the absence of maternal diabetes.
- With an estimated fetal weight greater than 4,500 g, a prolonged second stage of labor or arrest of descent in the second stage is an indication for cesarean delivery.

The following recommendations are based primarily on consensus and expert opinion (Level C):

- Although the diagnosis of fetal macrosomia is imprecise, prophylactic cesarean delivery may be considered for suspected fetal macrosomia with estimated fetal weights greater than 5,000 g in women without diabetes and greater than 4,500 g in women with diabetes.
- Suspected fetal macrosomia is not a contraindication to attempted vaginal birth after a previous cesarean delivery.

Definitions:

Grades of Evidence

I Evidence obtained from at least one properly designed randomized controlled trial

II-1 Evidence obtained from well-designed controlled trials without randomization

II-2 Evidence obtained from well-designed cohort or case–control analytic studies, preferably from more than one center or research group

II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

Levels of Recommendation

Level A — Recommendations are based on good and consistent scientific evidence.

Level B — Recommendations are based on limited or inconsistent scientific evidence.

Level C — Recommendations are based primarily on consensus and expert opinion.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Overall Benefits:

Appropriate diagnosis and management of fetal macrosomia

Specific Benefits:

Cesarean delivery reduces—but does not eliminate—the risk of birth trauma and brachial plexus injury associated with fetal macrosomia. The protective effect of cesarean delivery is large. Using a multivariate analysis to investigate risk factors for brachial plexus injury, investigators reported an odds ratio for cesarean delivery of 0.01 to 0.20.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

These guidelines should not be construed as dictating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or type of practice.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2000 Nov (reviewed 2005)

GUIDELINE DEVELOPER(S)

American College of Obstetricians and Gynecologists - Medical Specialty Society

SOURCE(S) OF FUNDING

American College of Obstetricians and Gynecologists (ACOG)

GUIDELINE COMMITTEE

American College of Obstetricians and Gynecologists (ACOG) Committee on Practice Bulletins-Obstetrics

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

Electronic copies: None available

Print copies: Available for purchase from the American College of Obstetricians and Gynecologists (ACOG) Distribution Center, PO Box 4500, Kearneysville, WV 25430-4500; telephone, 800-762-2264, ext. 192; e-mail: sales@acog.org. The ACOG Bookstore is available online at the ACOG Web site.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on September 21, 2004. The information was verified by the guideline developer on December 9, 2004.

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