

DIABETE, GRAVIDANZA E MULTIETNICITÀ

la nuova sfida
della diabetologia
del terzo millennio



MILANO **24 MARZO** 2023 | Starhotel Ritz



IL PARTO: QUANDO E COME...

Sonia Zatti

Dipartimento Ostetrico Ginecologico

ASST Spedali Civili Brescia



Presidio Ospedaliero
di Brescia

Sistema Socio Sanitario



Regione
Lombardia

ASST Spedali Civili

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DISCLOSURE...

- UCB PHARMA

➡ Parto, quale:

- Timing
- Modalità
- Monitoraggio e complicanze



Valutare:

- tipo di diabete (GDM, pregravidico)
- Compenso glicemico
- Fattori di rischio materni
- Crescita fetale

COMPLICANZE FETO- NEONATALI

1) I neonati di madre con GDM presentano un rischio aumentato di:

- parti operativi;
- distocia di spalla;
- trauma alla nascita.

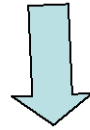
2) Aumentata incidenza di anomalie fetali (diabete pregravidico).

3) Rischio futuro per la progenie di obesità, Diabete, deficit intellettivo e motorio.

Modalità del parto



**Travaglio
spontaneo**



**Travaglio
indotto**



**TC
elettivo**

Evitare interventi non necessari

**Assicurare la nascita di un bambino sano
senza causare rischi inutili sia per la madre che
per il bambino**

(Oats, 1996)

Diabetes in pregnancy: A comparison of guidelines

Muneera Ahmed AlKhalifa¹, Stephanie Hsu², Gulmeen Raza³ and M. Samy Ismail^{3*}

¹King Hamad University Hospital, Al Sayh, Kingdom of Bahrain
²Research Department, King Hamad University Hospital, Al Sayh, Kingdom of Bahrain
³Department of Obstetrics and Gynecology, King Hamad University Hospital, Al Sayh, Kingdom of Bahrain

Table 6. Comparison of recommendations on delivery

	NICE	SOGC/CDA	KHUH	ACOG	FIGO
PED					
With Complications	Before 37 weeks	IOL before 38 weeks		IOL at 36-38+6 weeks or earlier	NA
Without Complications	IOL/ELCS at 37-38+6 weeks	IOL at 38-39 weeks		IOL at 39-39+6 weeks	
GDM					
On Lifestyle Management	IOL/ELCS before 40+6 weeks	IOL at 40 weeks	IOL at 39-40+6 weeks	Expectant management up to 40+6 weeks	IOL at 38-39 weeks if - EFW 3.8-4kg or LGA - Poorly controlled or complications present
On Pharmacological Management		IOL at 39 weeks	Failed in-hospital glycemic control or Abnormal fetal testing: 34-36+6 weeks Poorly controlled: 37-38+6 weeks Well-controlled: 39-39+6 weeks Prophylactic ELCS if EFW ≥ 4.5 kg		ELCS at 38-39 weeks if EFW > 4000g IOL at 40-41 weeks if no complications

Abbreviations: NA: not applicable; PED: pre-existing diabetes; GDM: gestational diabetes mellitus IOL: induction of labor; ELCS: elective Cesarean section; EFW: estimated fetal weight

Timing e modalità del parto diabete NICE 2008

NICE 2008: clinical guideline n.63 DIABETES IN PREGNANCY

1.4.1 Timing and mode of birth

- 1.4.1.1 Pregnant women with diabetes who have a normally grown fetus should be offered elective birth through induction of labour or by elective caesarean section if indicated, after 38 completed weeks.
- 1.4.1.2 Diabetes should not in itself be considered a contraindication to attempting vaginal birth after a previous caesarean section.
- 1.4.1.3 Pregnant women with diabetes who have an ultrasound-diagnosed macrosomic fetus should be informed of the risks and benefits of vaginal birth, induction of labour and caesarean section

Timing del parto **diabete** ACOG 2013

NUMBER 137, AUGUST 2013



The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

PRACTICE BULLETIN

CLINICAL MANAGEMENT GUIDELINES FOR OBSTETRICIAN—GYNECOLOGISTS

- DM **ben controllato**: parto **entro la 40w**
- DM **mal controllato***: parto **entro la 39w**
- valutare opzione TC se peso stimato >4500 gr
(raccomandazione B)

Gestational diabetes

Timing e modalità del parto diabete NICE 2015

NICE National Institute for
Health and Care Excellence



1.4 *Intrapartum care*

Timing and mode of birth

Advise pregnant women with type 1 or type 2 diabetes and no other complications to have an elective birth by induction of labour, or by elective caesarean section if indicated, between 37⁺⁰ weeks and 38⁺⁶ weeks of pregnancy. [new 2015]

Consider elective birth before 37⁺⁰ weeks for women with type 1 or type 2 diabetes if there are metabolic or any other maternal or fetal complications. [new 2015]

Timing e modalità del parto GDM ACOG 2018

PRACTICE BULLETIN NUMBER 190, FEBRUARY 2018

The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS



Gestational Diabetes Mellitus

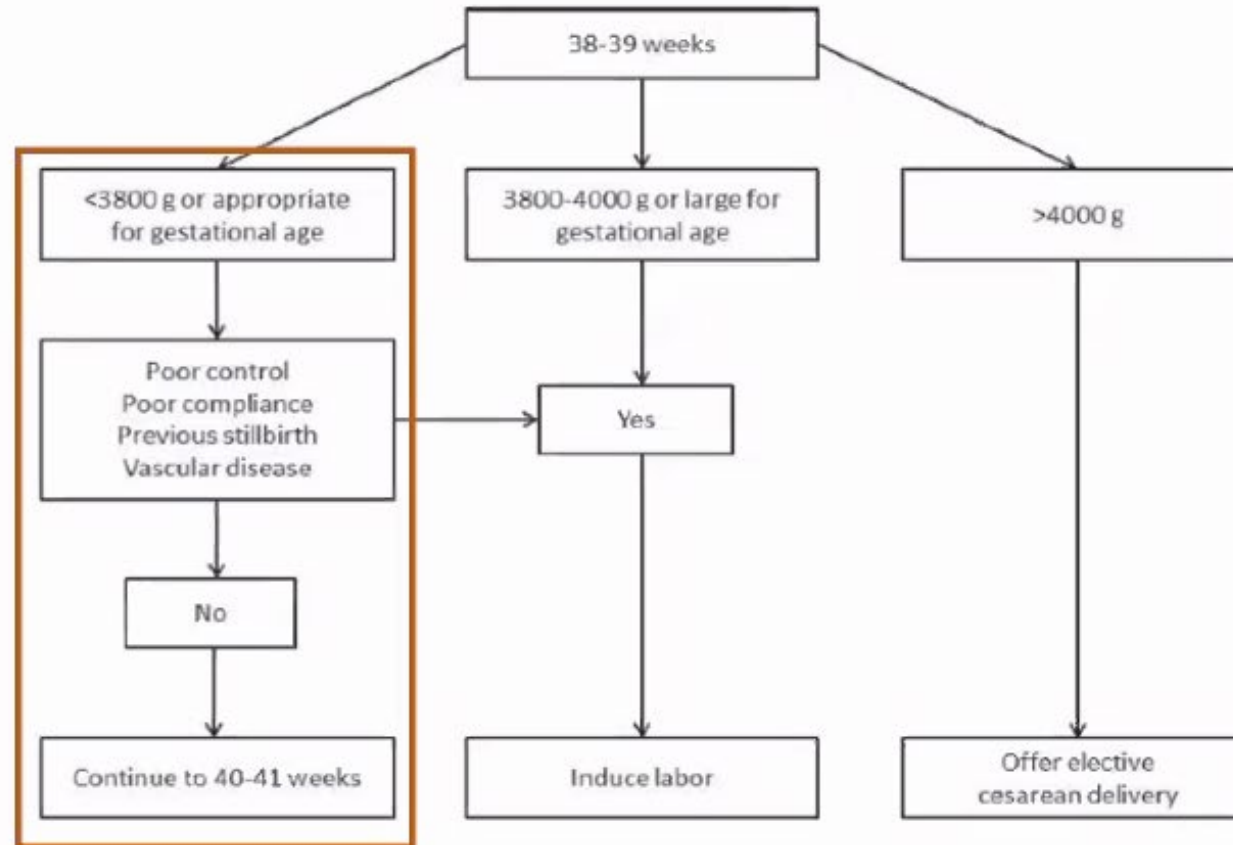
- ▶ The timing of delivery in women with GDM that is controlled with only diet and exercise (A1GDM) should not be before 39 weeks of gestation, unless otherwise indicated. In such women, expectant management up to 40 6/7 weeks of gestation in the setting of indicated antepartum testing is generally appropriate.
- ▶ For women with GDM that is well controlled by medications (A2GDM), delivery is recommended at 39 0/7 to 39 6/7 weeks of gestation.
- ▶ Earlier delivery for women with poorly controlled GDM (between 37 0/7 weeks and 38 6/7 weeks of gestation may be justified)
- ▶ Women with GDM should be counseled regarding the option of scheduled cesarean delivery when the estimated fetal weight is 4,500 g or more.

attesa fino a 41

non oltre 40

37-39 sett

FIGO GDM guidance Timing and mode of delivery

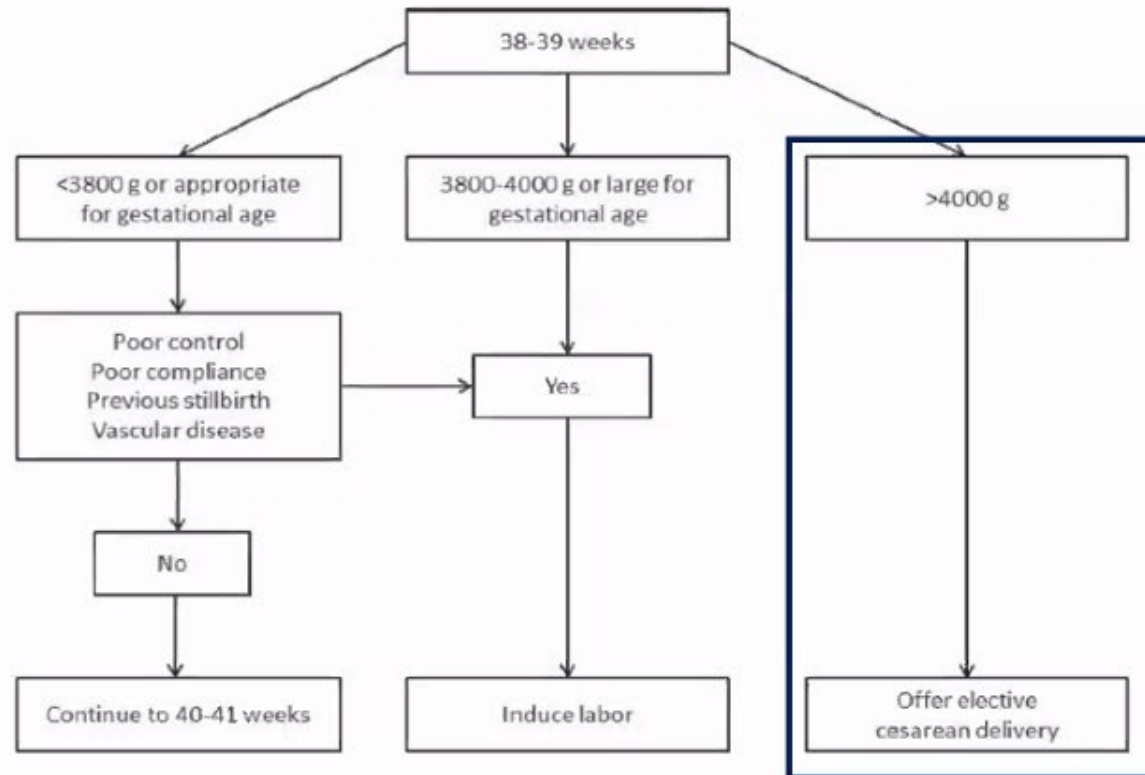


Pregnancy with good
glycemic control and
appropriate size fetus
can continue until

{40-41
weeks}

Figure 4. Timing of delivery in women with gestational diabetes mellitus and diabetes in pregnancy.

FIGO GDM guidance Timing and mode of delivery



Pregnancy with good glycemic control and appropriate size fetus **can continue** until

40-41 weeks

Elective cesarean delivery may be recommended if fetal weight exceeds

4000 grams

Figure 4. Timing of delivery in women with gestational diabetes mellitus and diabetes in pregnancy.

GDM review delle linee guida 2019

Volume 76, Number 6
OBSTETRICAL AND GYNECOLOGICAL SURVEY
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CME REVIEW ARTICLE

18

CHIEF EDITOR'S NOTE: This article is part of a series of continuing education activities in this Journal through which up to 36 *AMA PRA Category 1 Credits*[™] can be earned in 2021. Instructions for how CME credits can be earned appear on the last page of the Table of Contents.

Diagnosis and Management of Gestational Diabetes Mellitus: An Overview of National and International Guidelines

Ioannis Tsakiridis, PhD,* Sonia Giouleka, MSc,† Apostolos Mamopoulos, PhD,‡
Anargyros Kourtis, PhD,§ Apostolos Athanasiadis, PhD,‡
Dionysia Filopoulou, MD,† and Themistoklis Dagklis, PhD¶

*Clinical Fellow in Maternal-Fetal Medicine, †Resident, ‡Professor, §Consultant Endocrinologist, and ¶Assistant Professor, Third Department of Obstetrics and Gynaecology, Faculty of Medicine, Aristotle University of Thessaloniki, Thessaloniki, Greece

TABLE 2
Summary of Recommendations on the Management of GDM During Pregnancy, Labor, and the Postpartum Period

	NICE	FIGO	ADIPS	SOGC	ACOG	ADA	ES
Timing of delivery	<40 ⁺⁶ wk for uncomplicated GDM Induction of labor or elective cesarean delivery if no spontaneous birth until this time or earlier if complications exist	Induction at 38–39 wk if EFW = 3800–4000 g or LGA or poor glycemic control, previous stillbirth, vascular disease If not, continue to 40–41 wk If EFW >4000 g offer cesarean delivery	Not discussed	Induction between 38 and 40 wk depending on the glycemic control and the comorbid factors. (39 wk for insulin-treated GDM and 40 wk for diet-controlled GDM)	A1GDM 39–40 ⁺⁶ wk A2GDM 39–39 ⁺⁶ wk Earlier delivery if complications exist GDM not controlled even in hospital: 34–36 ⁺⁶ wk Cesarean delivery considered if EFW ≥4500 g	Not discussed	Not discussed
Blood glucose control during labor	Recommended. Monitoring of capillary PG every hour. Glucose target is 4–7 mmol/L	Recommended. Glucose target is 4–7 mmol/L	Not discussed	Not discussed	Not discussed	Not discussed	Recommended. Glucose target is 4–7 mmol/L

Obiettivo glicemico durante il travaglio 72-126mg/dl

Diabetes in pregnancy: A comparison of guidelines

Muneera Ahmed AlKhalifa¹, Stephanie Hsu², Gulmeen Raza³ and M. Samy Ismail^{3*}

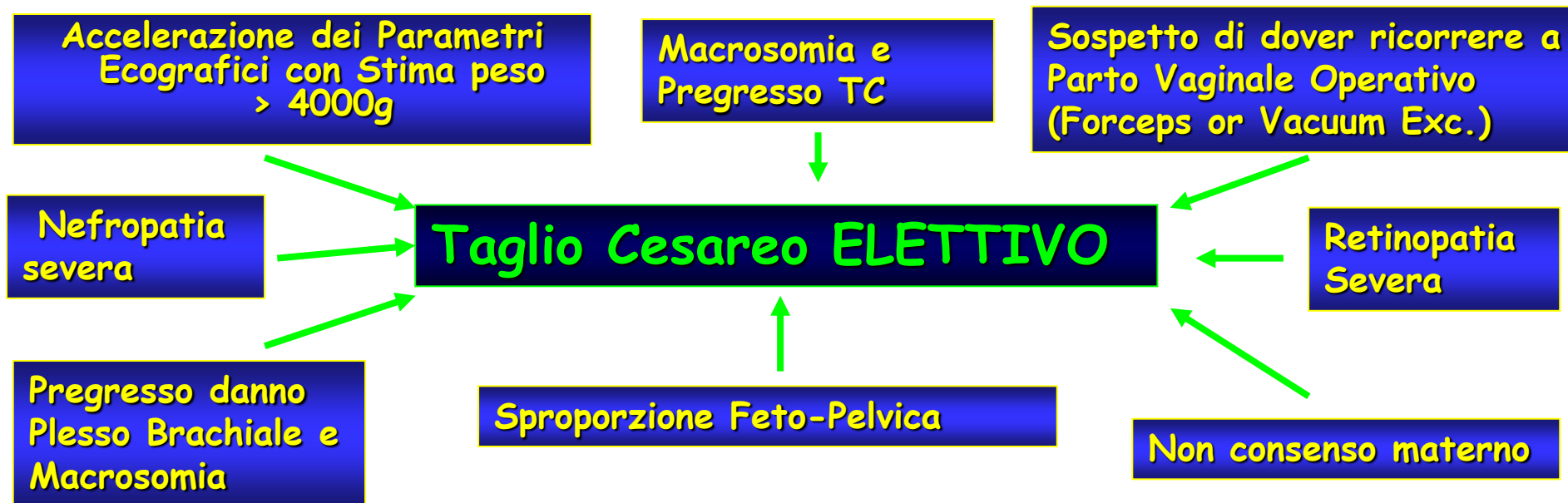
¹King Hamad University Hospital, Al Sayh, Kingdom of Bahrain
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³Department of Obstetrics and Gynecology, King Hamad University Hospital, Al Sayh, Kingdom of Bahrain

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DIABETE Pre-GESTAZIONALE



Travaglio e Parto Vaginale

Ricorda:
Feto di madre Diabetica, con Iperinsulinemia, è ad alto rischio di sviluppo di KETONEMIA/IPOKALIEMIA e di ARITMIA CARDIACA

Parto in III° livello

Consenso materno

STAn Monitoring
(se possibile)

Consultant presente

RESEARCH

Open Access



Planned vaginal and planned cesarean delivery outcomes in pregnancies complicated with pregestational type 1 diabetes – A three-year academic tertiary hospital cohort study

Heidi Kruit^{1*} , Saara Mertsalmi² and Leena Rahkonen¹

- uguale incidenza di eventi avversi materni
- Minor distress respiratorio parto vaginale programmato

Abstract

Background: Finland has the world's highest incidence of 62.5/100000 of diabetes mellitus type 1 (DM1) with approximately 400 (1%) DM1 pregnancies annually. Pregnancies complicated by DM1 are accompanied with increased risk for perinatal morbidity and mortality. Timing and mode of delivery are based on the risk of complications, yet the data on labor induction is limited. The aim of this study was to compare delivery outcomes in planned vaginal (VD) and planned cesarean deliveries (CD) in late preterm and term DM1 pregnancies, and to evaluate the feasibility of labor induction.

Materials and Methods: Pregnant women with DM1, live singleton fetus in cephalic presentation ≥ 34 gestational weeks delivering in Helsinki University Hospital between January 1st 2017 and December 31st 2019 were included. The primary outcome were the rates of adverse maternal and perinatal outcome. The study population was classified according to the 1980-revised White's classification. Statistical analyses were performed by IBM SPSS Statistics for Windows.

Results: Two hundred four women were included, 59.8% ($n = 122$) had planned VD. The rate of adverse maternal outcome was 27.5% ($n = 56$), similar between the planned modes of delivery and White classes. The rate of perinatal adverse outcome was 38.7% ($n = 79$), higher in planned CD (52.4% vs. 29.5%; $p = 0.001$). The most common adverse perinatal event was respiratory distress (48.8% vs. 23.0%; $p < 0.001$). The rate of adverse perinatal outcome was higher in White class D + Vascular compared to B + C (45.0% vs. 25.0%, OR after adjustment by gestational age 2.34 [95% CI 1.20–4.50]; $p = 0.01$). The total rate of CD was 63.7% ($n = 130$), and 39.3% ($n = 48$) in planned VD. Women with White class D + Vascular more often had emergency CD compared to White Class B + C (48.6% vs. 25.0%; $p = 0.009$). The rate of labor induction was 51%, being 85.2% in planned VD. The rate of VD in induced labor was 58.7% ($n = 61$) and the rate of failed induction was 14.1% ($n = 15$).

Conclusion: Planned VD was associated with lower rate of adverse perinatal outcome compared to planned CS, with no difference in the rates of adverse maternal outcome. Induction of labor may be feasible option but should be carefully considered in this high-risk population.



Predictors of a successful vaginal delivery in women with type 1 diabetes: a retrospective analysis of 20 years

Friederike Weschenfelder¹ · Eva Herrmann¹ · Thomas Lehmann² · Ekkehard Schleußner¹ · Christof Kloos³ · Wilgard Battfeld⁴ · Tanja Groten¹ 

Received: 23 April 2021 / Accepted: 13 September 2021 / Published online: 24 September 2021
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Conclusion

In this descriptive study, factors that predict the success of vaginal delivery were history of vaginal delivery and the modifiable factors diabetic control and GWG. For nulliparous women, the duration of diabetes seems to be of special interest—postponing pregnancy and childbearing should therefore be avoided. Our study provides data, which can improve the quality of counseling pregnant women with type 1 diabetes regarding what to expect pursuing vaginal delivery.

- Pregresso PV
 - Controllo glicemico migliore
 - Minor Incremento ponderale in gravidanza
- Durata pregressa del diabete più breve

RESEARCH ARTICLE

Open Access



Conclusion

We developed a new risk score using three characteristic features to predict primary CD in women with GDM. The score was well validated with high reliability. Risk stratification based on the score could help clinicians assess the chance of primary CD in each woman with certainty. The application of the model should guide attending staff in closely monitoring women at high risk for primary CD. Proactive early detection with the management of some modifiable risk factors, through, for example, strict dietary and weight control, may reduce the risk of primary CD in women with GDM and improve obstetric outcomes.

Table 3 Risk of primary cesarean delivery in the development and validation cohorts according to risk category

Risk category	Development cohort (n = 385)		Validation cohort (n = 448)	
	Total number of women	Number of women who underwent primary CD (%)	Total number of women	Number of women who underwent primary CD (%)
Low (0 points)	143	21/143 (14.7)	149	28/149 (18.8)
Intermediate (1–3 points)	173	66/173 (38.2)	218	87/218 (39.9)
High (≥ 4 points)	69	43/69 (62.3)	81	63/81 (77.8)

CD Cesarean delivery

...allora Induzione Si!
...ma usando la Clinica!



MODALITÀ DEL PARTO

- Diabete pregravidico: 35% TC
- DG: 20% TC

COME PREVENIRE E PREVEDERE LA DISTOCIA DI SPALLA?

(0.1% sul globale)

Non è possibile se non cercando di evitare la macrosomia.

MA

- la diagnosi di macrosomia fetale è imprecisa;
- la sospetta macrosomia non è sempre indicazione all'induzione

Si calcola + del 10% di fallimento dell'induzione nelle diabetiche

...quale limite di peso per Parto Vaginale in Gravida Diabetica?

Pregestational Diabetes Mellitus

ACOG PRACTICE BULLETIN

CLINICAL MANAGEMENT GUIDELINES FOR
OBSTETRICIAN-GYNECOLOGISTS
NUMBER 60, MARCH 2005

of the large fetus (79–81). To prevent traumatic birth injury, cesarean delivery may be considered if the estimated fetal weight is greater than 4,500 g in women with diabetes (74). Induction of labor in pregnancies with a

Diabetes in pregnancy

management of diabetes and its complications from preconception to the postnatal period

Clinical Guideline

March 2008 (revised reprint July 2008)

Funded to produce guidelines for the NICE by NICE

National Collaborating Centre for
Women's and Children's Health

Improving pregnancy outcomes: The rate of shoulder dystocia can be decreased by the use of ultrasound monitoring and elective delivery of those babies weighing over 4250 g. In one study, ultrasound was found to determine accurately the presence or

ACOG

Sebbene la diagnosi di macrosomia sia imprecisa, il **cesareo profilattico** dovrebbe essere considerato per sospetta macrosomia quando il peso fetale stimato è **> 5000g in donne non diabetiche** e **> 4500g in donne con diabete**

ACOG Practice Bulletin. Fetal Macrosomia. 2000

ACOG Practice Bulletin. Shoulder Dystocia. 2002

I parti operativi dalla media-pelvi dovrebbero essere evitati, se possibile, in pazienti con GDM che hanno un peso fetale stimato $\geq 4000\text{g}$ e un secondo stadio del travaglio prolungato

ACOG Practice Bulletin. Gestational Diabetes. 2001

MODALITA' DI PARTO IN RELAZIONE AL PESO FETALE STIMATO

**EFW < 4000g / LGA
Controllo metabolico non
ottimale**

**Parto vaginale
indotto a 38-39 sett.**

4000g < EFW > 4500g

Parto vaginale o TC

Considerare:

- caratteristiche materne
(statura,...)
- anamnesi ostetrica
(pregressi parti
macrosomici o con
distocia)
- fattori limitanti la
valutazione del EFW

EFW > 4500g

**Programmare
TC elettivo**

Popolazione diabetica e macrosomia

Induzione del travaglio a 38 w di gestazione in pazienti con sospetto di feto LGA

(large for gestational age: > 90° percentile)

Taglio cesareo se il peso fetale stimato con l'ecografia è > 4250g

Donne non diabetiche: taglio cesareo quando il peso fetale stimato è > 4500g

...comunque
molti studi osservazionali
indicano incremento di rischio
di Distocia di Spalla
in Gravida Diabetica
al superamento dei...

...4000g!

Macrosomia fetale e distocia di spalla

In uno studio di Nesbitt su oltre 175,000 nati in California la percentuale di nascite complicate da distocia di spalla (SD) per parto naturale, non complicate da diabete è stata:

- 5.25%** tra 4000 e 4250 g,
- 9.1%** tra 4250 e 4500 g
- 14.3%** tra 4500 e 4750 g,
- 21.1%** tra 4750 e 5000 g.



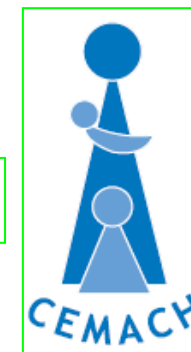
Ma approssimativamente dal 40% al 60% delle distocie di spalla si verificano in neonati che pesano meno di 4000 g, e dal 70% al 90% dei neonati macrosomi vengono partoriti senza alcuna sequela.

- Il 50% delle SD si verificano senza alcun precedente segno-allarme
- Anche se peso > 4000g, SD solo nel 3.3% dei parti

PREGNANCY IN WOMEN WITH TYPE 1 AND TYPE 2 DIABETES

Confidential Enquiry into Maternal and Child Health

Improving the health of mothers, babies and children



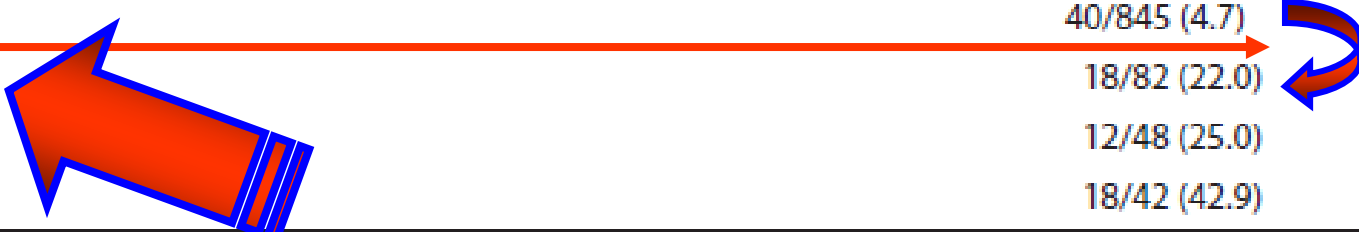
8.5 Shoulder dystocia and birth trauma

8.5.1 Shoulder dystocia

Shoulder dystocia was documented in 89 of the 1124 singleton vaginal deliveries (7.9%). This compares with 3% in large regional published data.¹⁰ The incidence of shoulder dystocia

Table 8.2: Shoulder dystocia in babies born by vaginal delivery

Birth weight (g)	Shoulder dystocia/total vaginal deliveries n/N (%)
<2500	1/107 (0.9)
2500–3999	40/845 (4.7)
4000–4249	18/82 (22.0)
4250–4499	12/48 (25.0)
4500+	18/42 (42.9)



RISCHIO DI DISTOCIA DI SPALLA

Peso fetale	Non diabetiche %	Diabetiche %
<4000 gr.	0.7%	2.2%
4000-4499 gr.	6.7%	13.9%
>4500 gr.	14.5%	52.5%

RCOG 2005

Le caratteristiche antropometriche dei neonati di madre affetta da diabete pregravidico, che presentano un accrescimento sproporzionato del torace e dell'addome rispetto al capo e agli arti, li rendono particolarmente soggetti a tale complicanza anche per pesi relativamente bassi.

Gabbe SG. Obstet Gynecol 2003

A PARITA' DI PESO IN NEONATI NATI DA MADRI CON DM HANNO
MAGGIORE INCIDENZA DI DISTOCIA DI SPALLA



TIMING MODALITA' DEL PARTO NEL GDM

MACROSOMIA FETALE NEL GDM

AJOG
American
Journal of
Obstetrics
and Gynecology

Anthropometric differences in macrosomic infants of diabetic and nondiabetic mothers

[Melinda B. McFarland MD](#), [Courtney G. Trylovich MD](#), [Oded Langer MD](#)

Macrosomic infants of diabetic mothers is characterized by **larger shoulder and extremity** circumferences, a decreased head-to-shoulder ratio, significantly higher body fat, and thicker upper extremity skinfolds **compared with nondiabetic control infants of similar birthweight and birth length.**

Prediction of large-for-gestational-age neonate by routine third-trimester ultrasound

N. KHAN^{1,2,3}, A. CIOBANU³, T. KARAMPITSAKOS^{1,2,3}, R. AKOLEKAR^{1,2} and K. H. NICOLAIDES³

In screening by EFW > 90th percentile at 35 + 0 to 36 + 6 weeks' gestation, the predictive performance for a LGA neonate born at ≥ 37 weeks' gestation was modest (**65% and 46% for neonates with birth weight > 97th and > 90th percentiles**, respectively, at a screen-positive rate of 10%)



Outcome	Estimated fetal weight	Abdominal circumference	P
Screening at 35 + 0 to 36 + 6 weeks			
LGA > 90 th percentile	0.861 (0.856–0.867)	0.837 (0.831–0.843)	< 0.001
LGA > 97 th percentile	0.902 (0.894–0.910)	0.882 (0.872–0.891)	< 0.001
Screening at 31 + 0 to 33 + 6 weeks			
LGA > 90 th percentile	0.815 (0.806–0.825)	0.790 (0.780–0.800)	< 0.001
LGA > 97 th percentile	0.853 (0.838–0.868)	0.828 (0.812–0.845)	< 0.001

Values in parentheses are 95% CI.

CONCLUSION

- 1. Better 35-37 weeks than 31-34 weeks
- 2. Better EFW than AC



Suspected big baby: a difficult clinical problem in obstetrics

KJELL HARAM, JOUKO PIRHONEN AND PER BERGSJØ

From the Department of Obstetrics and Gynecology, Haukeland University Hospital, Bergen, Norway

Diverse definizioni di **MACROSOMIA**:

- peso alla nascita > 4000g (*Langer O.. Clin Obt Gyn 2000*)
- peso alla nascita > 4250g
- ACOG peso alla nascita > 4500g

La macrosomia fetale è associata a un parto operativo, aumentato rischio di taglio cesareo ed emorragia postpartum

Gonen R, Obstet Gynecol, 1996

- Aumento lacerazioni perineali
- incontinenza urinaria/fecale
- disfunzioni sessuali

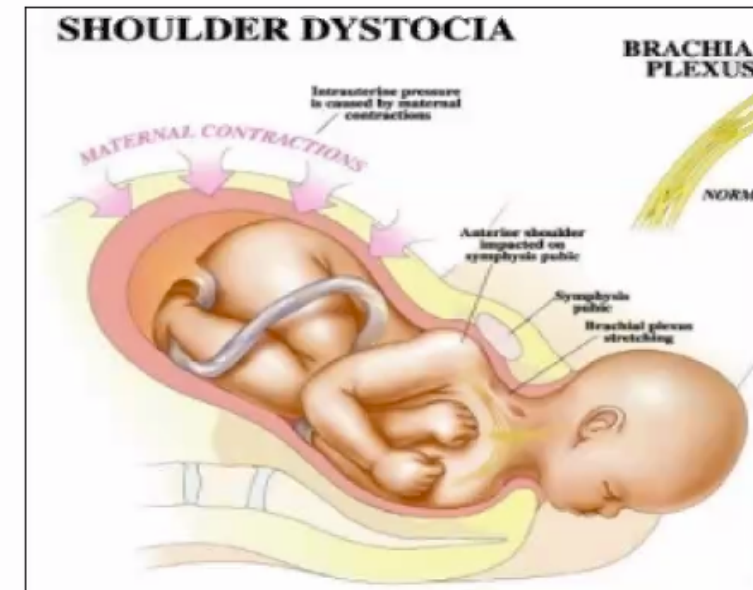
Macrosomia e distocia

Conseguenze neonatali:

- Paralisi transitoria plesso brachiale (3.0-16.8%)
- Frattura della clavicola (1.7-9.5%)
- Frattura dell' omero (0.1-4.2%)
- Paralisi permanente del plesso brachiale (0.5-1.6%)
- encefalopatia ipossico-ischemica (0.3%)
- morte (0-0.35%)

Hoffman MK, Obstet Gynecol. 2011;117(6):1272.

Gherman RB, Am J Obstet Gynecol. 2006;195(3):657.



✧ **Distocia di spalla:**

conseguenze neonatali

✧ **Mortalità neonatale in caso di distocia di spalla→1.9-28.9% ed è dovuta alla prolungata ipossia fetale**

✧ **possono derivare dalle manovre ostetriche necessarie per il disimpegno delle spalle.**

✧ **Fratture della clavicola e dell'omero:**

raramente provocano disabilità permanente quando sono trattate.

Hermandez C. Clin Obstet Gynecol 1990

✧ **Paralisi di Erb o Duchenne**

interessa il quinto e il sesto segmento cervicale, determinando flaccidità del braccio con estensione e intrarotazione dell'avambraccio e con adduzione della mano.

Nell'80% dei casi regredisce dopo 3-6 mesi dal parto.

✧ **Paralisi di Klumpke**

più rara ma più grave, con regressione solo nel 40% dei casi ad un anno; coinvolta l'ottava radice cervicale e la prima toracica con interessamento dei soli muscoli intrinseci della mano.

GDM E MACROSOMIA FETALE



*up to 588 cesareans would need to be performed to prevent a single case of permanent **brachial plexus injury** for estimated fetal weight of 4,500 g”*

1/588

*up to 922 cesareans would need to be performed to prevent a single case of permanent **brachial plexus injury** for estimated fetal weight of 4,000 g”*

1/922

Therefore it appears reasonable to recommend that women with GDM should be counseled regarding the risks and benefits of a scheduled cesarean delivery when the estimated fetal weight is 4,500 g or more.”

Counselling

*If a woman decides to undergo a **trial of labor**, we perform **an operative vaginal delivery only if second stage descent has been normal** because instrumental delivery is associated with a higher risk of shoulder dystocia and brachial plexus injury”.*

Ventosa

Attenzione



*...in sintesi
ideale è gestire
un feto di peso <4000,
con parto vaginale
NON operativo*



- Danno Pavimento Pelvico

- *Non è facile prevenirlo*
- *Mettendo in atto le Raccomandazioni sopra esposte forse si può ridurre il rischio*

...e se dovesse succedere?

Take Home Message



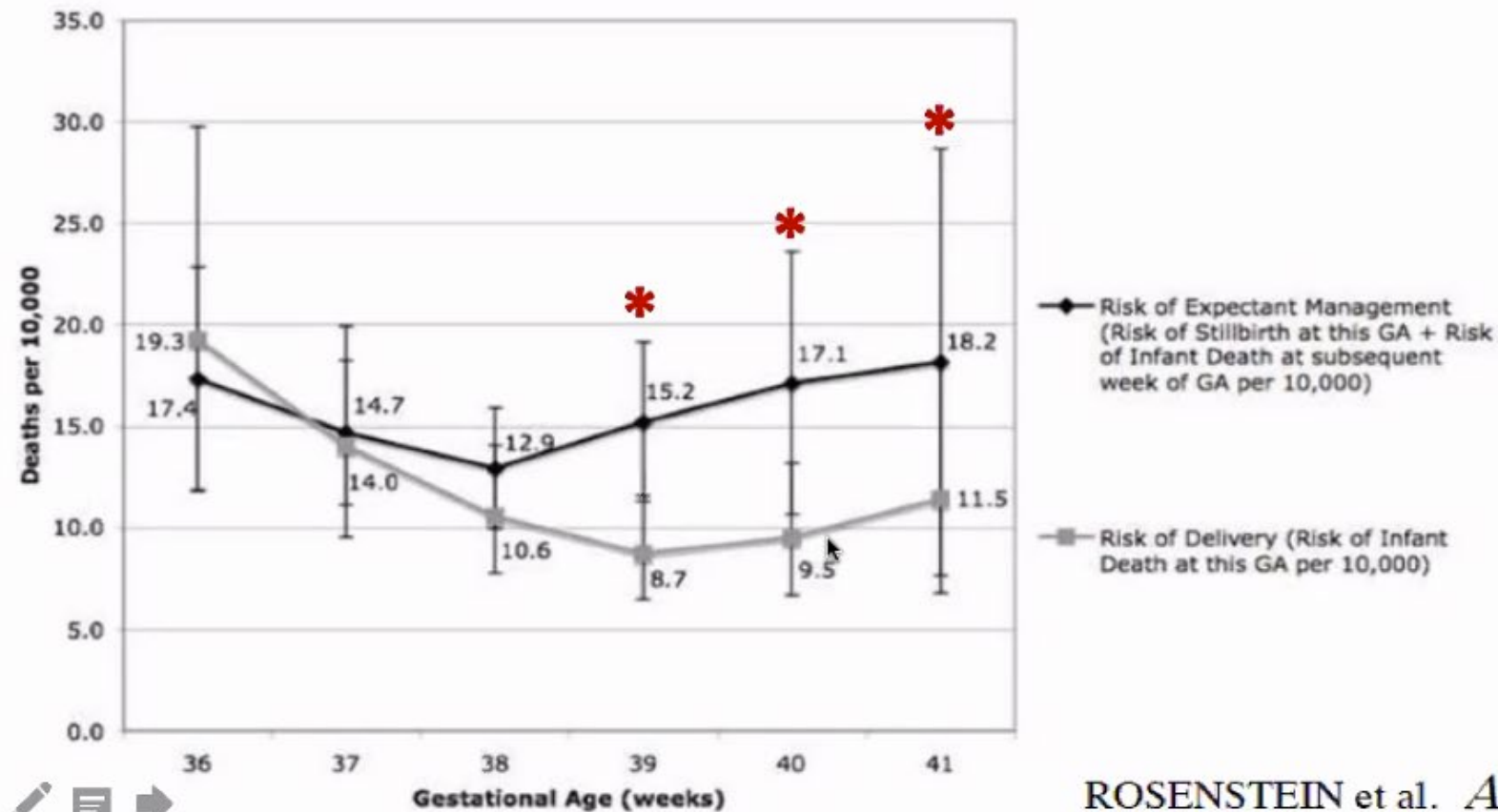
Royal College of
Obstetricians and
Gynaecologists

Setting standards to improve women's health

Green-top Guideline No. 29
March 2007

THE MANAGEMENT OF THIRD- AND FOURTH-DEGREE PERINEAL TEARS

INDUZIONE VS ATTESA NEL GDM: STILLBIRTH



**RETROSPECTIVE SINGLETON
PREGNANCIES WITH GDM
DELIVERING AT 36-42 WEEKS**

ROSENSTEIN et al. *Am J Obstet Gynecol.* 2012 April

Active Compared With Expectant Delivery Management in Women With Gestational Diabetes

A Systematic Review

1 RCT, 4 studi osservazionali

CONCLUSION: Active rather than expectant management of labor at term for women with GDM may reduce rates of macrosomia and related complications. Further RCTs and observational studies with a broader range of outcomes are needed for sufficient evidence to inform clinical practice.

(*Obstet Gynecol* 2009;113:206–17)

NONE OF THESE STUDIES WERE POWERED TO EXAMINE STILLBIRTH OR INFANT DEATH

MACROSOMIA FETALE



BJOG

An International Journal of
Obstetrics and Gynaecology

Induction of labour for suspected macrosomia at term in non-diabetic women: a systematic review and meta-analysis of randomized controlled trials

ER Magro-Malosso, G Saccone, M Chen, R Navathe, M Di Tommaso, V Berghella (2016)

Four RCTs, including 1190 non-diabetic women with suspected fetal macrosomia at term, were analysed. Pooled data **did not show a significant difference in incidence of caesarean delivery** [relative risk (RR) 0.91, 95% confidence interval (CI) 0.76–1.09], **operative and spontaneous vaginal delivery, shoulder dystocia, intracranial haemorrhage, brachial plexus palsy**, Apgar score <7 at 5 min, cord blood pH <7, and mean birth weight comparing women who **received induction of labour with those who were managed expectantly.**



Insulin-requiring diabetes in pregnancy: A randomized trial of active induction of labor and expectant management

Siri L. Kjos, MD, Olivia A. Henry, MPH, MB, BCh, Martin Montoro, MD,
Thomas A. Buchanan, MD, and Jorge H. Mestman, MD
Los Angeles, California

September 1993
Am J Obstet Gynecol

200 donne, diabete insulino trattato (13 diabete preesistente)

Induzione a 38 vs attesa fino a 42

No differenza in TC, > % di LGA e peso medio nel gruppo di attesa

Immediate delivery or expectant management in gestational diabetes at term: the GINEXMAL randomised controlled trial

S Alberico,^a A Erenbourg,^a M Hod,^b Y Yogeve,^b E Hadar,^b F Neri,^c L Ronfani,^d G Maso,^b the GINEXMAL Group

BJOG 2017;

425 donne con DMG, escluse se PFS > 4000

Induzione tra 38+0 e 39+0 vs attesa fino a 41

No differenza in TC e outcome perinatale

Conclusions ginexmal

In women with gestational diabetes, without other maternal or fetal conditions, no difference was detected in birth outcomes regardless of the approach used (i.e. active versus expectant management). Although the study was underpowered, the magnitude of the between-group difference was very small and without clinical relevance.

Evitare

- ✓ casi di stillbirth a termine (legati ad iperglicemia e macrosomia)
- ✓ complicanze ostetriche correlate all'eccessiva crescita fetale: distocia di spalla e aumento TC per mancata progressione della PP

STATO DELL'ARTE DELL'INDUZIONE MEDICA NELLA PAZIENTI CON GDM



INDUZIONE

vs

ATTESA



- ✓ NON aumenta il tasso dei TC rispetto all'attesa
- ✓ NON aumenta il tasso dei parti operativi
- ✓ NON aumenta la distocia di spalla

Management intrapartum

19% GDM



IPOGLICEMIA NEONATALE

Controllo glicemico
ante partum

Epoca gestazionale
Peso alla nascita
Complicanze materne e neonatali

IPERGLICEMIA/ACIDOSI FETALE

Controllo glicemico intrapartum

MANTENERE GLICEMIA IN TRAVAGLIO >70 E < 126

ACOG 2018

Endocrine Society Clinical Practice Guidelines 2013



Management intrapartum

In GDM e DM2 con fabbisogno insulinico $< 0.5\text{U/kg/die}$

Controllo glicemia capillare ad avvio travaglio

Se < 100 ogni 2h (ogni 4h se GDM in dieta)

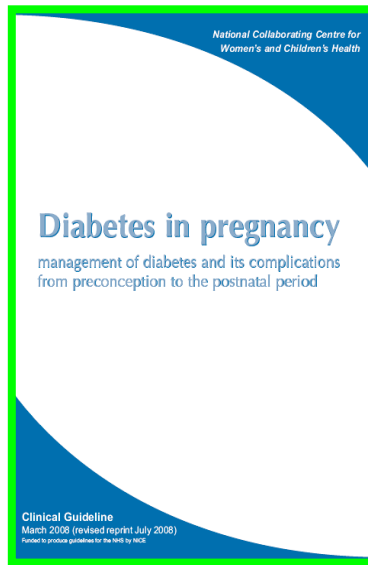
Se > 100 ogni ora

Se glicemia > 120 per due letture $\longrightarrow$ **AVVIARE PROTOCOLLO EV**

In DM1 e DM2 con fabbisogno insulinico $> 0.5\text{U/kg/die}$

Avviare subito protocollo ev e controllo glicemia capillare ogni ora

DIABETE PREGRAVIDICO



- Staff Ostetrico adeguato, con mantenimento EUGLICEMIA
- CTG continuo
- Trasferimento in Centro di III° livello

Analgesia- Anestesia:

Prioritario prevenire
Ipotensione e Chetoacidosi materna

Crisi Chetonemica

DIABETE PREGRAVIDICO

In travaglio è più facile che sia da Lipolisi

- Idratazione (*Soluzione salina 1 L in prima ora 500ml/h*)
- Destrosio 5% + Insulina R. (*Bolo:15 UI poi 5 UI/h*)
- Correzione Ipokaliemia (*15-20mEq/h ← Range:3.4 - 4.8mmol*)

Fattori Predisponenti:

- Infezioni, Vomito e Disidratazione
- Uso β Simpatico-mimetici

Ricorda:

← Condizione Alto Rischio x
Danno Cerebrale/Morte Fetale ⇒ Eventuale TC Urgente

Crisi Ipoglicemica severa

- **Infusione Rapida Glucosio 10%**

(risposta insulinemica inferiore che per somministrazione os)

- **Glucagone e.v. *GlucaGen 1mg** (e.v. ma anche s.c. o i.m.)

- risposta entro 1 minuto, si protrae x 5'-10'
- promuove la Glicogenolisi epatica
- non attraversa la placenta

N.B. ricorda che stimola anche la produzione di Insulina!

DIABETE, GRAVIDANZA E MULTIETNICITÀ

la nuova sfida
della diabetologia
del terzo millennio



MILANO **24 MARZO** 2023 | Starhotel Ritz

➤ *Grazie per l'attenzione...*

