Diabetis mellitus gestacional
Què sabem i què no sabem?

Rosa Corcoy Pla
Hospital de la Santa Creu i Sant Pau

18è Congrés de la SCEN, Barcelona 2015

- **Concepte**

Definició

- **“La DMG es defineix com la intolerància hidrocarbonada de gravetat variable amb detecció durant la gestació. El dx és independent de que calgui Ins pel Tx o de que la condició persisteixi després de la gestació. No exclou la possibilitat de que existís una intolerància a la glucosa abans de la gestació”**

Summary & Recommendations, V International WCGD; Diabetes Care, July 2007
IADPSG; Diabetes Care, March 2010
WHO Report 2013

- **Dx + Tx suposen milloria**

EDITORIALS

Gestational Diabetes Mellitus — Time to Treat

Michael F. Greene, M.D., and Caren G. Solomon, M.D., M.P.H.

BMJ

RESEARCH

Effects of treatment in women with gestational diabetes mellitus: systematic review and meta-analysis

Karl Horvath, project manager EBM review center,[1] head of outpatient facility diabetes and metabolism,[2] Klaus Koch, project manager,[3] Klaus Jeitler, scientific assistant,[1] Eva Matyas, scientific assistant,[1] Ralf Bender, head of department of medical biometry,[3] Hilda Bastian, head of department of health information,[3] Stefan Lange, deputy director,[3] Andrea Siebenhofer, professor for chronic care and health services research,[4] project manager[1]

BMJ. **2010** Apr 1;340:c1395

Table 1 | Characteristics of studies included in pool A: specific treatment for gestational diabetes mellitus versus usual care. All studies took place in hospital outpatient facilities

	No	Diagnosis	Intervention	Mean (SD) age (years)	Mean (SD) gestation at study entry (weeks)	Mean (SD) BMI	Ethnicity (%)
Bonomo 2005[17] (Italy)		C&C, 1 pt					
Intervention	150	2 steps: risk factors present, positive on 50 g glucose challenge*; negative on 100 g oral glucose tolerance test†	Diet	31 (5)	NA	23 (4)	All white
Control	150		Usual care	31 (5)	NA	23 (5)	All white
Crowther 2005[18-20] (Australia)		WHO					
Intervention	490	2 steps: risk factors present or positive result on 50 g glucose challenge*; positive result on 75 g oral glucose tolerance test§	Diet/insulin	31 (5)	29 (28-30)‡	27 (23-31)‡	White 73, Asian 19, other 9
Control	510		Usual care	30 (6)	29 (28-30)‡	26 (23-31)‡	White 78, Asian 14, other 8
Landon 2009[21] (USA)		C&C					
Intervention	485	2 steps: positive on 50 g glucose challenge, positive on 100 g oral glucose tolerance test¶	Diet/insulin	29 (6)	29 (2)	30 (5)	White 25, Latin-American 58, Afro-American 12, Asian 5, other 1
Control	473		Usual care	29 (6)	29 (2)	30 (5)	White 25, Latin-American 56, Afro-American 11, Asian 6, other 2
Langer 1989[22] (USA)		NDDG					
Intervention	63	2 steps: positive on 50 g glucose challenge**, positive on 100 g oral glucose tolerance test††	Diet/insulin	31 (5)	31 (3)	NA‡‡	White 36, Latin-American 33, Afro-American 30
Control	63		Usual care	28 (6)	31 (3)	NA‡‡	White 33, Latin-American 33, Afro-American 33
O'Sullivan 1966[23] (USA)		O'Sullivan					
Intervention	307	2 steps: risk factors present or positive on 50 g glucose challenge**, positive on 100 g oral glucose tolerance test¶¶	Diet and insulin	30 (NA)	NA	NA	NA
Control	308		Usual care	31 (NA)	NA	NA	NA

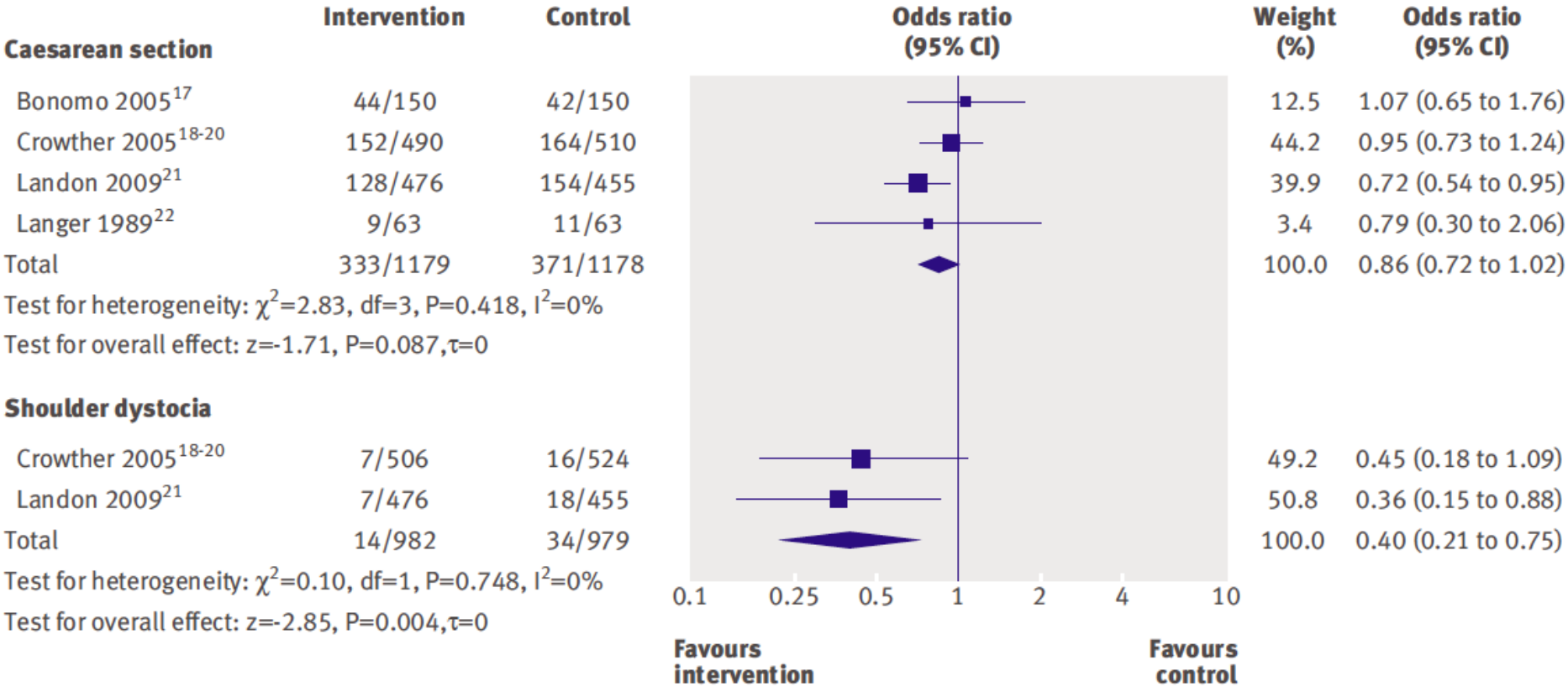


Fig 2 | Maternal outcomes in pool A (DerSimonian and Laird random effects model)

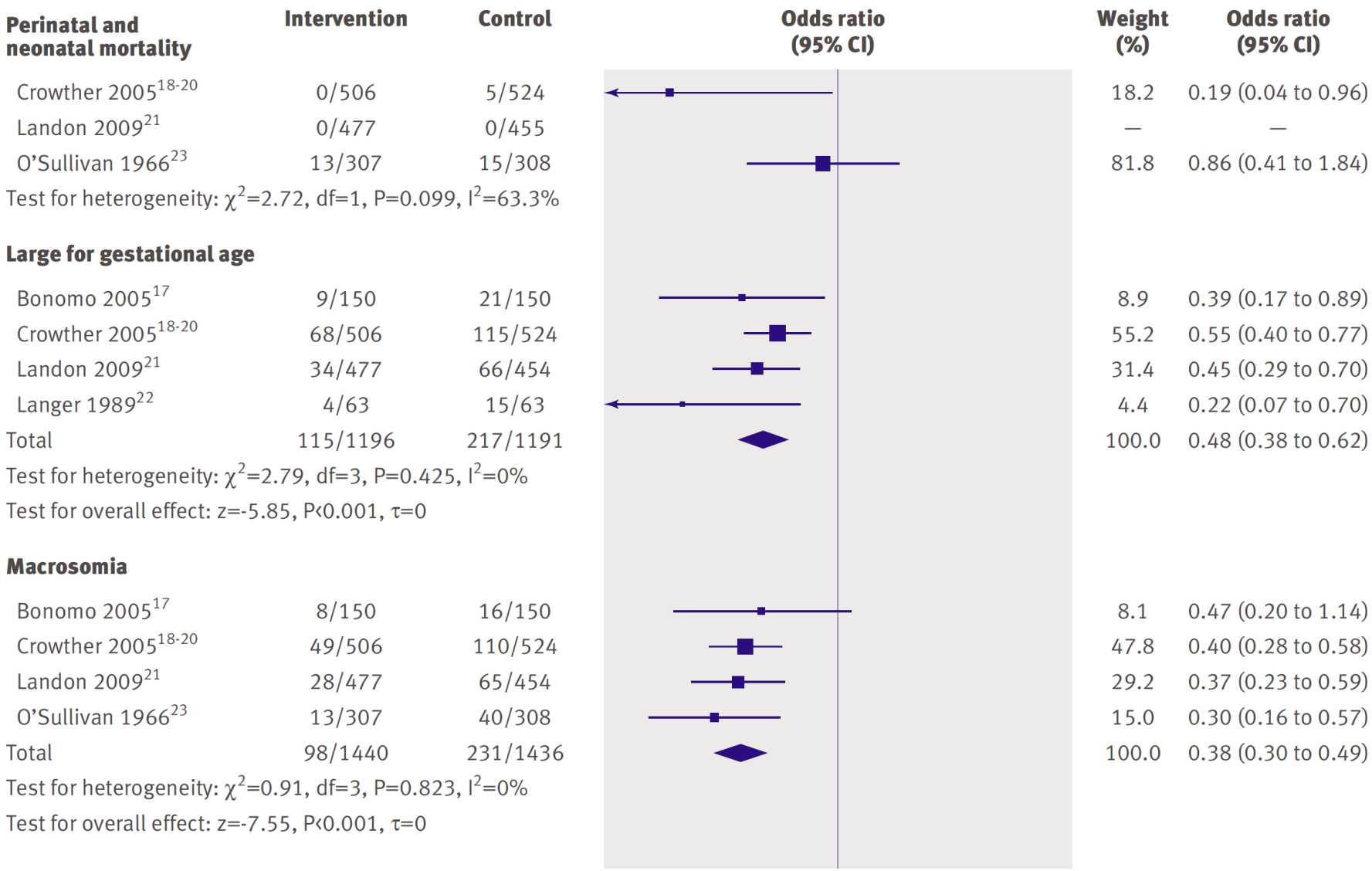


Fig 3 | Neonatal outcomes in pool A (DerSimonian and Laird random effects model, except for perinatal and neonatal morality and birth trauma, which use Peto fixed effects model)

- **Criteris diagnòstics**

Criteris més habituals pel dx de la DMG (mmol/l mg/dl)

Origen Any Recomenat per... Dosi glu	O' Sullivan plasma 1980-1991 NDDG 1st - 3rd WC 100 gr	C & C 1982 4th WC, 1998 5th WC, 2005 100 gr	WHO 1998 WHO 75 gr	HAPO 2010 IADPSG 75 gr
Basal	105 5,8	95 5,3	125 110? 7,0 6,1?	92 5,1
1h	190 10,6	180 10		180 10
2h	165 9,2	155 8,6	200 140 11,1 7,8	153 8,5
3h	145 8,1	140 7,8		
N punts	2	2	1	1

HAPO Protocol

It is not a RCT!

75 gm OGTT 24-32 weeks

Fasting, 1 & 2 hr venous plasma

25,505

Unblinded at Field Center if
OGTT Fasting > 105 &/or 2 hr > 200
or random glucose ≥ 160 ~ 36 wks
or < 45 mg/dl

746 (2.9%) unblinded for treatment

1,443 (5.7%) incomplete

23,316
Standard care for Field Center
Cord glucose & C-peptide
Neonatal glucose: 1-2 hrs of age
Anthropometrics by 72 hrs:
Length, head circ, weight, skin folds x3

Hyperglycemia and Adverse Pregnancy Outcomes

N Engl J Med 2008;358:1991-2002

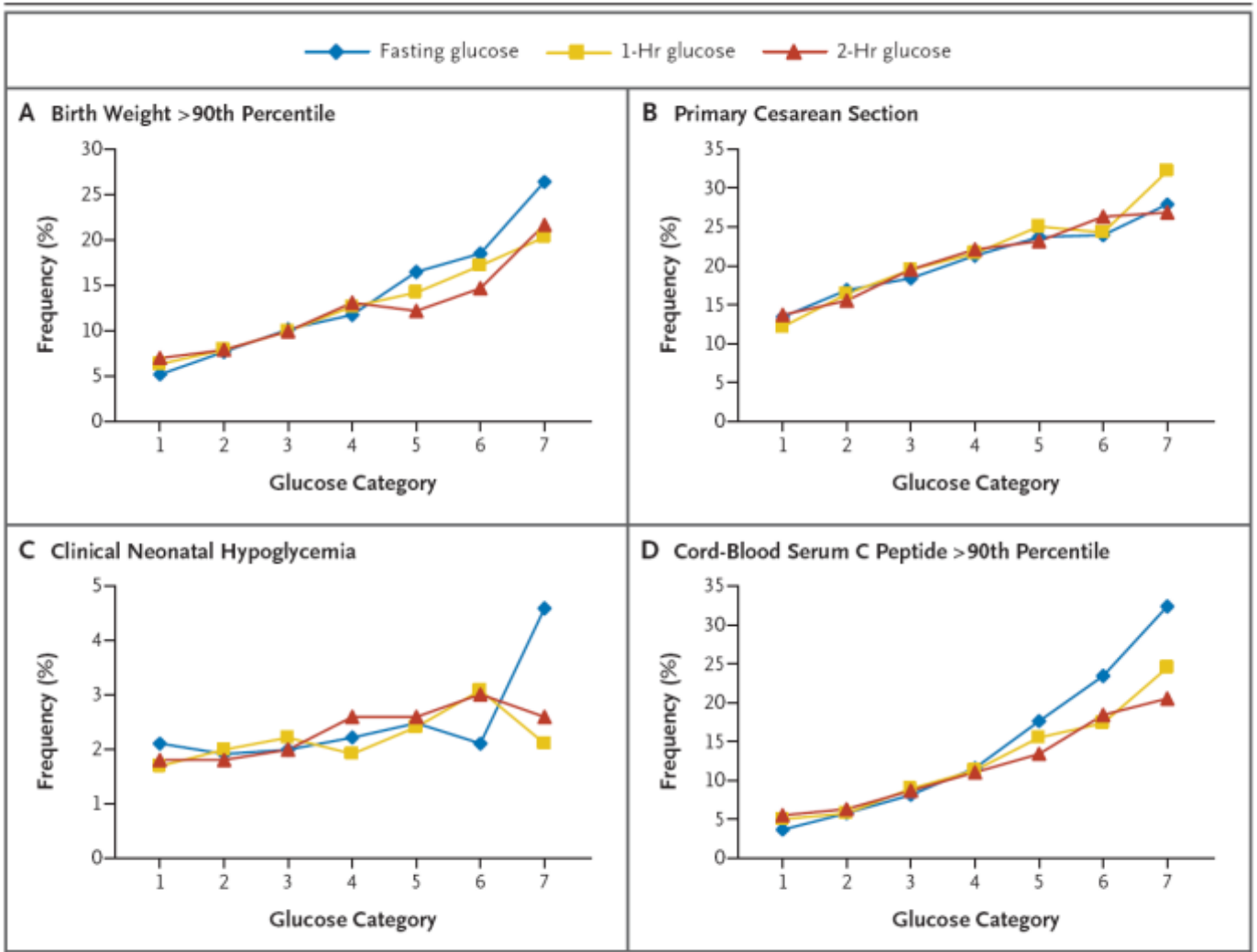
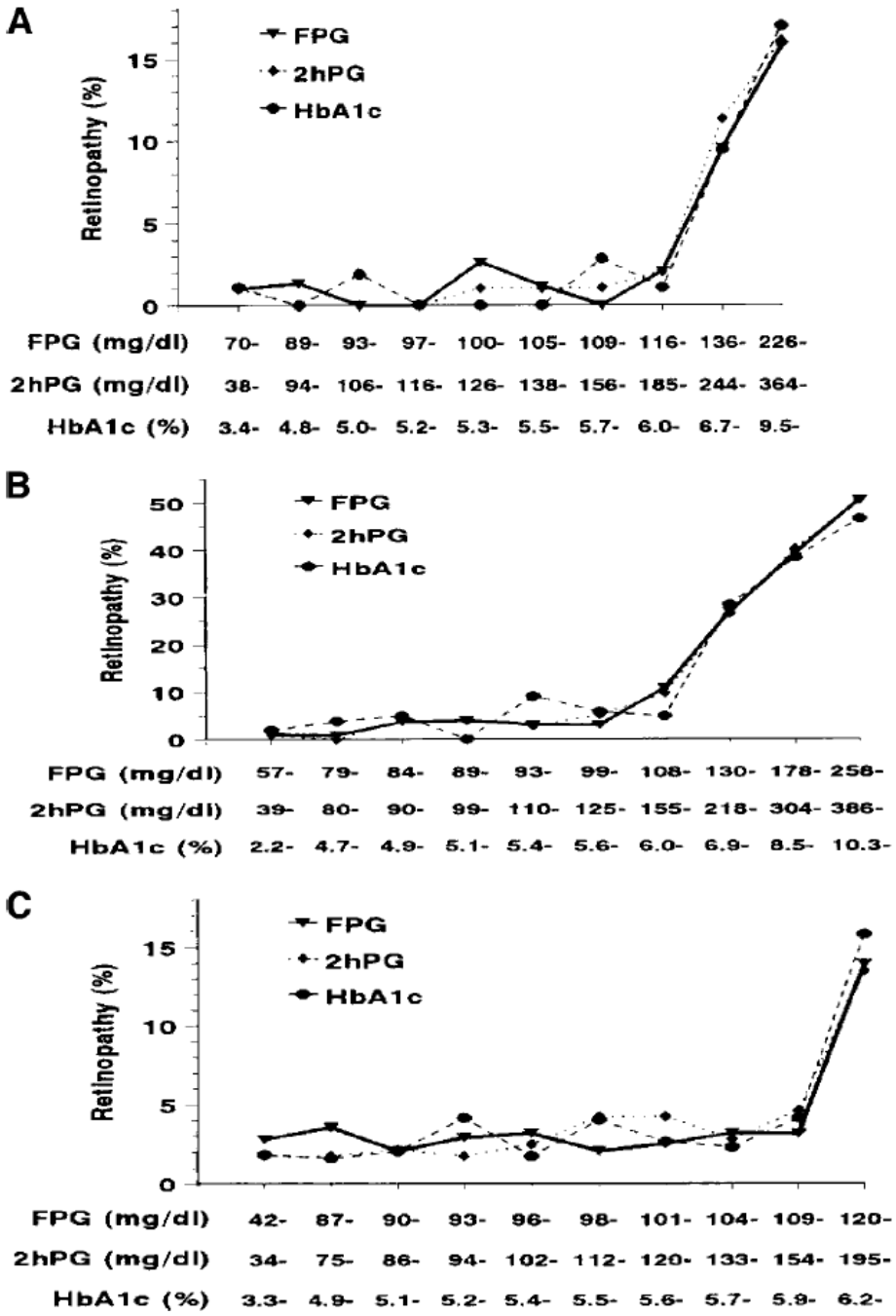


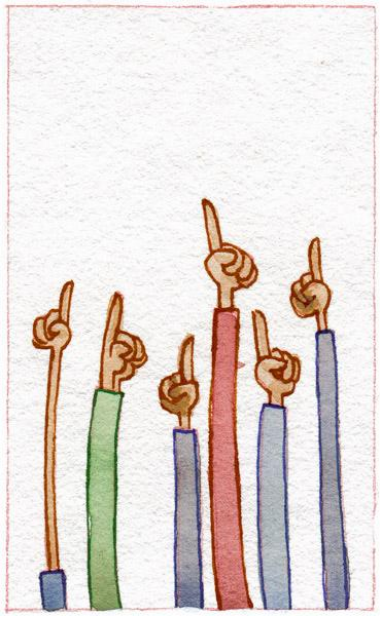
Figure 1. Frequency of Primary Outcomes across the Glucose Categories.



Prevalence of retinopathy by deciles of FPG, 2HPG, and A1C in Pima Indians (A), Egyptians (B), and participants in NHANES III (C)
Expert Committee. Diabetes Care 1997;20:1183–1197

IADPSG Recommendations on the Diagnosis and Classification of Hyperglycemia in Pregnancy

Metzger BE, Gabbe SG, Persson B, Buchanan TA, Catalano PA, Damm P, Dyer AR, Leiva A, Hod M, Kitzmiler JL, Lowe LP, McIntyre HD, Oats JJ, Omori Y, Schmidt MI. International association of diabetes and pregnancy study groups recommendations on the diagnosis and classification of hyperglycemia in pregnancy. Diabetes Care. 2010 Mar;33(3):676-82



Criteris IADPSG

Pasadena 2008

Consens en:

- **variables de resultat rellevants per definir criteris dx:**
  - **RN GEG (peso >P90)**
  - **adipositat sc (greix sc >P90)**
  - **hiperinsulinisme (PC cordó >P90)**

- **punt de tall com la glucèmia que identifiqui el grup de gestants amb un risc per sobre de la mitjana:**
  - **OR 1,50**
  - **OR 1,75**
  - **OR 2,0**

- **diagnòstic amb >=1 valor >= punt de tall**

Sensibilitat i prevalença

COMBINED THRESHOLDS BASED ON MEAN GLUCOSE FOR ODDS RATIO OF 1.75 MULTIVARIATE MODELS

Table 3. BW > 90th Percentile Unadjusted frequency at mean = 9.0, 9.2. 9.3%

Glucose Measure	Threshold (mg/dl)	Threshold (mmol/L)	% Above Threshold	Sensitivity	Specificity	PPV	NPV
FPG	92	5.1	8.3%	16.9%	92.6%	19.5%	91.3%
1-hr PG	180	10.0	14.0%	24.1%	87.1%	16.5%	91.6%
2-hr PG	153	8.5	16.1%	27.2%	85.1%	16.2%	91.7%

- GEDE. New diagnostic criteria for GDM after the HAPO study. Are they valid in our environment? Av Diabetol. 2010;26(3):139-142 May-June 2010
- Alemania
- Japón
- Italia; obstetras?
- Israel: adaptación?
- Australia and NZ: adaptación?
- Canada: Manitoba OR 2.0
- UK: ROCOG 2011 comenta IADPSG; SIGN IADPSG solo si FR

- ADA. Standards of medical care in diabetes--2011. Diabetes Care. 2011 Jan;34 Suppl 1:S11-61; 2013: CC & IADPSG
- ACOG. Committee opinion no. 504: screening and diagnosis of GDM. Obstet Gynecol. 2011 Sep;118(3):751-3
- IDF: no posicionamiento
- NIH Consensus Development Conference: Diagnosing GDM; October 29–31, 2012, Bethesda, Maryland
- WHO: 2013
- EBCOG: 2015

- GEDE. New diagnostic criteria for GDM after the HAPO study. Are they valid in our environment? Av Diabetol. 2010;26(3):139-142 May-June 2010
  - Alemania
  - Japón
  - Italia; obstetras?
  - Israel: adaptación?
  - Australia and NZ: adaptación?
  - Canada: Manitoba OR 2.0
  - UK: ROCOG 2011 comenta IADPSG; SIGN IADPSG solo si FR

- ADA. Standards of medical care in diabetes--2011. Diabetes Care. 2011 Jan;34 Suppl 1:S11-61; 2013: CC & IADPSG
- ACOG. Committee opinion no. 504: screening and diagnosis of GDM. Obstet Gynecol. 2011 Sep;118(3):751-3
- IDF: no posicionamiento
- NIH Consensus Development Conference: Diagnosing GDM; October 29–31, 2012, Bethesda, Maryland
- WHO: 2013
- EBCOG: 2015

Introduction of IADPSG criteria for the Sc & Dx of GDM results in improved pregnancy outcomes at a lower cost in a large cohort of pregnant women: the St. Carlos Gestational Diabetes Study

Duran A. Diabetes Care. 2014 Sep;37(9):2442-50

- ↑ GDM
  - 10.6% CC, N = 1750 vs, vs 35.5% IADPSG, N = 1526

- Improvement in pregnancy outcomes
  - ↓ in the rate of gestational hypertension (4.1 to 3.5%: -14.6%, P < 0.021)
  - ↓ prematurity (6.4 to 5.7%: -10.9%, P < 0.039)
  - ↓ cesarean section (25.4 to 19.7%: -23.9%, P < 0.002)
  - ↓ small for gestational age (7.7 to 7.1%: -6.5%, P < 0.042)
  - ↓ large for gestational age (4.6 to 3.7%: -20%, P < 0.004)
  - ↓ Apgar 1-min score <7 (3.8 to 3.5%: -9%, P < 0.015)
  - ↓ admission to neonatal intensive care unit (8.2 to 6.2%: -24.4%, P < 0.001)

- Estimated cost savings of €14,358.06 per 100 women evaluated using IADPSG

ClinicalTrials.gov

A service of the U.S. National Institutes of Health

Now Available for Public Comment: Notice of Proposed Rulemaking (NPRM) for FDAAA 801 and NIH Draft Reporting Policy for NIH-Funded Trials

Randomizing Two Gestational Diabetes Screening Methods in a Diverse HMO

This study is enrolling participants by invitation only.

Sponsor:
Kaiser Permanente

Collaborator:
Eunice Kennedy Shriver N

Information provided by (R
Kaiser Permanente

ClinicalTrials.gov Identifier:
NCT02266758

First received: May 22, 2014
Last updated: October 21, 2014

Full Text View | Tal

Purpose

This project randomizes two
their babies (over 35,000 tota
these two strategies in routin

ClinicalTrials.gov

A service of the U.S. National Institutes of Health

Now Available for Public Comment: Notice of Proposed Rulemaking (NPRM) for FDAAA 801 and NIH Draft Reporting Policy for NIH-Funded Tr

Gestational Diabetes Diagnostic Methods (GD2M)

This study is not yet open for participant recruitment. (see Contacts and Locations)

Verified December 2014 by University of Pittsburgh

Sponsor:
University of Pittsburgh

Information provided by (Responsible Party):
University of Pittsburgh

ClinicalTrials.gov Identifier:
NCT02309138

First received: November 25, 2014
Last updated: December 2, 2014
Last verified: December 2014
History of Changes

Full Text View | Tabular View | No Study Results Posted | Disclaimer | How to Read a Study Record

Purpose

This is a single site blinded RCT of 920 pregnant women with singleton gestation designed to compare the Carpenter-Coustan and IADP
for diagnosing gestational diabetes. Maternal metabolic profiles and infant growth will be assessed at randomization and at one year pos

Coneixement insuficient

- **RCT IADPSG vs altres criteris; resultats finals**
  - **OR 1.75**
  - **OR 2.0?**
- **primer trimestre**
- **tercer trimestre**

- **Cribat**

Screening tests for GDM: a systematic review for the USPTF

Donovan L. Ann Intern Med. 2013 Jul 16;159(2):115-22

- **50 g glucose challenge test 1h PG > = 7.8 mmol/l**
  - **Sens 70-88%**
  - **Sp 69-89%**
  - **positive LR 2.6 to 6.5**
  - **neg LR 0.16 to 0.33**
- **50 g glucose challenge test 1h PG > = 7.2 mmol/l**
  - **Sens 88-99%**
  - **Sp 66-77%**
  - **positive LR 2.7 to 4.2**
  - **neg LR 0.02 to 0.14**
- **For a FPG threshold of 4.7 mmol/L**
  - **Sens 87%**
  - **Sp 52%**
  - **positive LR 1.8**
  - **neg LR 0.25**
- **No studies compared the OGCT with IADPSG criteria**

Frequency of GDM at collaborating centers based on IADPSG consensus panel-recommended criteria: the HAPO Study

Sacks DA. Diabetes Care 2012;35:526-8

Table 1—*Frequency of GDM by field center (IADPSG criteria) and participants with elevated FPG, 1-h PG, and 2-h PG*

Center*	Participants/ center	Percent GDM	Percent of GDM diagnosed by each glucose measure			Percent of all women with individual glucose measures ≥ threshold			Percent of women with GDM with individual glucose measures ≥ threshold		
			FPG†	1-h PG‡	2-h PG§	FPG	1-h PG	2-h PG	FPG	1-h PG	2-h PG
HAPO overall	23,957	17.8	55	33	12	9.8	9.7	6.7	55	55	38
Bellflower, CA	1,981	25.5	73	21	6	18.7	12.4	6.9	73	49	27
Singapore, Singapore	1,787	25.1	47	39	14	11.9	16.3	11.7	47	65	47
Cleveland, OH	797	25.0	64	27	10	15.9	12.0	9.4	64	48	38
Manchester, U.K.	2,376	24.3	67	26	7	16.2	13.8	8.5	67	57	35
Bangkok, Thailand	2,499	23.0	24	64	12	5.5	17.4	10.0	24	76	43
Chicago, IL	753	17.3	53	28	19	9.2	8.0	8.0	53	46	46
Belfast, U.K.	1,671	17.1	63	30	7	10.7	7.8	4.2	63	46	25
Toronto, Canada	2,028	15.5	66	24	9	10.3	7.5	5.2	66	48	34
Providence, RI	757	15.5	73	19	9	11.2	5.9	5.3	73	38	34
Newcastle, Australia	668	15.3	64	25	11	9.7	7.2	5.7	64	47	37
Hong Kong, PRC	1,654	14.4	26	45	29	3.8	8.9	9.4	26	62	65
Brisbane, Australia	1,444	12.4	50	31	18	6.2	5.9	4.8	50	47	39
Bridgetown, Barbados	2,093	11.9	74	9	17	8.8	3.8	5.1	74	32	43
Petah-Tiqva, Israel	1,818	10.1	43	45	13	4.3	6.3	3.4	43	62	33
Beersheba, Israel	1,631	9.3	57	28	15	5.3	3.8	2.4	57	41	26

PG, plasma glucose; PRC, People's Republic of China. *Centers listed from highest to lowest unadjusted frequency of GDM. †Includes all with FPG ≥ threshold without regard to 1-h and 2-h value. ‡Includes all with FPG < threshold and 1-h ≥ threshold without regard to 2-h value. §Only 2-h value is ≥ threshold.

Coneixement insuficient

- **RCT test de cribat vs estudi universal sobre resultats finals**
- **(estudis simulació)**
- **primer trimestre**
- **a la població d'interès**

- **Tractament.** **Monitorització**

Maternal glycemic thresholds for initiation of Ins Tx

1st workshop	Some centers advocate Ins Tx if dietary management does not consistently maintain the FPG <105 mg/dl and the 2h pp BG <120 mg/dl. However the point at which Ins Tx should be instituted remains uncertain
2nd workshop	If dietary management does not consistently maintain the FPG <105 mg/dl and/or the 2h pp PG <120 mg/dl on >=2 occasions within a 2-wk interval, Ins Tx is initiated in many centers
3rd workshop	The use of Ins is now widely recommended when standard dietary management does not consistently maintain normal FPG <105 mg/dl and/or the 2h pp PG <120 mg/dl. Data from many sources indicate that the upper limit for N values for FPG may be <105 mg/dl...
4th workshop	Although there are no data from controlled trials to identify ideal glycemic targets to prevent fetal risks, evidence was presented that lowering maternal CBG to =< 95 mg/dl in the fasting state, <140 mg/dl at 1h and/or <120 mg/dl 2h after meals may reduce the risk of excessive fetal growth to approximate the risk in the general population
5th workshop	....unchanged

Postprandial versus preprandial blood glucose monitoring in women with GDM requiring insulin therapy

de Veciana M. N Engl J Med. 1995;333:1237-41

- **66 women with GDM who required insulin therapy at 30 weeks of gestation or earlier**
- **DM managed according to the results of**
  - **pre (60-105 mg/dl) or**
  - **1h postprandial monitoring (<140 mg/dl)**
  - **FBG in both groups**
- **Postprandrial measurements**
  - **Greater change in HbA1c (-3 vs -0.6%)**
  - **Lower BW (3469 vs 3848g)**
  - **Less NN hypo (3% vs 21%)**
  - **Less LGA (12 vs 42%)**
  - **Less CS (12 vs 36%)**

Coneixement insuficient

- **freqüència de monitoritazció?**
- **millor punt de tall basal?**
- **1h vs 2h postprandial?**
- **millor punt de tall 1h?**
- **millor punt de tall 2h?**
- **glu mitjana o % valors > punt de tall?**

- **Tractament.** **Dieta**

Estratègies

- **Restricció calòrica**
- **Restricció CHO**
- **Distribució CHO**
- **Tipus CHO**
- **Contingut fibra**
- **Contingut greix**
- **Tipus de greix**

- **Based on the current available evidence, we did not find any significant benefits of the diets investigated**
  - **low-moderate GI vs high-moderate**
  - **low-GI diet versus high-fibre moderate-GI diet**
  - **energy-restricted diet versus no**
  - **low-CHO (≤ 45% daily energy intake) versus high-CHO (≥ 50%)**
  - **high-MUFA (at least 20% daily energy) versus high-CHO (>=50% daily energy)**
  - **standard-fibre diet (ADA diet) (20 grams fibre/day) versus fibre-enriched diet (80 grams fibre/day)**

  Han S. Different types of dietary advice for women with GDM. Cochrane Database Syst Rev. 2013;3:CD009275

- **Soy protein consumption in women with GDM significantly improved the glucose homeostasis parameters, TG and biomarkers of oxidative stress, as well as reductions in the incidence of NB hyperBb and hospitalizations**

  Jamilian M. The effect of soy intake on metabolic profiles of women with GDM. J Clin Endocrinol Metab 2015:jc20153454

Coneixement insuficient

- **RCT**
  - **contingut calòric**
  - **distribució macronutrients**
  - **tipus CHO**
  - **tipus greix**
  - **índex glucèmic**
  - **distribució en el dia**
- **(documentació pràctica clínica habitual)**

- **Tractament.** **Insulina**

Twice daily vs 4 times daily insulin dose regimens for DM in pregnancy: randomised controlled trial

Nachum Z. BMJ 1999; 319:1223-1227

Table 2 Variables of glycaemic control and obstetric data of diabetic pregnant women. Values are means (SD) unless stated otherwise

	Gestational diabetes			Pregestational diabetes		
Variable	Insulin twice daily	Insulin four times daily	Difference (95% CI)	Insulin twice daily	Insulin four times daily	Difference (95% CI)
No of women	136	138		60	58	
Gestational week at delivery	38.6 (1.9)	38.9 (1.6)	0.3 (–0.1 to 0.7)	38.3 (2.0)	38.1 (2.8)	–0.2 (–1.0 to 0.6)
Maternal weight gain (kg)	11.4 (3.5)	10.7 (3.6)	–0.7 (–1.5 to 0.1)	12.5 (4.0)	12.0 (4.5)	–0.5 (–2.0 to 1.0)
Capillary whole blood glucose (mmol/l)	5.60 (0.48)	5.42 (0.54)	0.19 (0.13 to 0.25)	5.9 (0.92)	5.47 (0.78)	0.45 (0.28 to 0.60)
Haemoglobin A_{1c} (%)	5.8 (1.0)	5.5 (1.0)	–0.3 (–0.2 to –0.4)	6.7 (1.8)	6.2 (1.3)	–0.5 (–0.2 to –0.8)
Fructosamine (μmol/l)	229 (43)	188 (27)	–41 (–37 to –45))	261 (62)	210 (33)	–51 (–45 to –57)
Daily insulin at delivery (units/day)	43 (84)	65 (80)	22 (12 to 32)	92 (54)	120 (84)	28 (15 to 41)
No (%) with adequate glycaemic control*	101 (74)	126 (91)	17 (8 to 26)	33 (55)	50 (86)	31 (15 to 47)
No (%) with severe maternal hypoglycaemia†	1 (0.7)	1 (0.7)	0	11 (18)	10 (17)	–1 (–15 to 13)
No (%) who had caesarean sections	38 (28)	39 (28)	0	19 (32)	13 (22)	–10 (–25 to 5)
No (%) with pregnancy induced hypertension	12 (9)	11 (8)	–1 (–11 to 9)	6 (10)	5 (9)	–1 (–11 to 9)

*Mean capillary blood glucose concentration <5.8 mmol/l.
†Requiring help from another person.

2 doses: 66% – 0 – 33%; 33%IR/66% NPH – 0 – 50% IR/50% NPH
4 doses: IR – IR – IR – NPH

Table 3 Perinatal and neonatal outcome in diabetic pregnant women. Values are numbers (percentages) unless stated otherwise

Variable	Gestational diabetes		Pregestational diabetes	
	Insulin twice daily	Insulin four times daily	Insulin twice daily	Insulin four times daily
No of women	136	138	60	58
Mean (SD) birth weight (g)	3436 (672)	3437 (587)	3376 (639)	3229 (758)
Perinatal mortality	1 (0.7)	0	2 (3.3)	2 (3.4)
Major congenital anomalies†	2 (1.5)	1 (0.7)	3 (5.0)	3 (5.1)
Small for gestational age (⩽10 centile)‡	7 (5.0)	4 (3.0)	3 (5.0)	3 (5.1)
Large for gestational age (⩾90 centile)‡	41 (30)	36 (26)	17 (28)	14 (24)
Macrosomia (⩾4000 g)	26 (19)	22 (16)	8 (18)	5 (9)
Apgar score <7 at 5 minutes	2 (1.5)	6 (4.3)	5 (8)	5 (9)
Hyaline membrane disease	0	1 (0.7)	4 (6.7)	1 (1.2)
Hypoglycaemia§	8 (5.9)	1 (0.7)*	12 (20.0)	2 (3.4)**
Hypocalcaemia	0	1 (0.7)	5 (8.3)	6 (10.3)
Polycythaemia††	3 (2.2)	7 (5.1)	5 (8.3)	3 (5.2)
Hyperbilirubinaemia‡‡	29 (21)	15 (11)*	28 (47)	27 (47)
Birth trauma§§	3 (2.2)	2 (1.4)	1 (1.7)	1 (1.7)
Overall neonatal morbidity	40 (29)	24 (17)*	36 (60)	29 (50)

*P=0.02; **P=0.01.

Parámetros intermedios

Referencia	Estudio	Control
Jovanovic 1999 **DG, ECA**	**Lispro** • **hipoglucemias basales 0,65%** • **glu pp >120 mg/dl 4%** • **↓ HbA1c -0,35%**	**Regular** • **0,93% *** • **5,5% *** • **-0,07%***
Mecaci 2003 **DG, ECA**	**Lispro** • **mayor N glu pp ***	**Regular**
Persson 2002 **DMI, ECA**	**Lispro** • **mejor glu post DNO *** • **más hipoglucemias BQ**	**Regular**
Price N 2007 **DMI**	**Glargina**	**NPH** • ns
Poyhonen 2007 **DMI**	**Glargina** • **-0.8 HbA1c 1st vs 3rd trim**	**NPH** • **-0.3 ***
Di Cianni 2007 **DG, ECA**	**Aspártica/Lispro** • **mejor glu post DNO**	**Regular**
Hod M. 2007 **DMI, ECA**	**Aspártica** • **Δ prandial 1er trim: 0.73 mmol/L** • **Δ prandial 3er trim: 1.1 mmol/L** • **hipos graves**	**Regular ♀** • **1.49 mmol/L *** • **1.5 mmol/L *** • **≈, tendencia**

Resultados perinatales

Referencia		
Jovanovic 1999 DG, ECA	Lispro	Regular • ns
Mecacci 2003 DG, ECA	Lispro	Regular • ns
Persson 2002 DMI, ECA	Lispro	Regular • ns
Price N 2007 DMI, DG	Glargina	NPH • ns
Poyhonen 2007 DMI	Glargina	NPH • ns
Di Cianni 2007 DG, ECA	Aspartica/Lispro • disminución índice cardiotorácico	Regular
Hod M. 2007 DMI, ECA	Aspártica • EG al parto prematuridad	Regular • ≈; tendencia

Coneixement insuficient

- **anàlegs lents vs NPH; resultats finals**
- **anàlegs ràpids vs regular; resultats finals**
- **Tx insulínic + dieta**
  - **Dieta fraccionada; insulina regular?**
  - **Dieta en 3 ingestes; anàlegs?**
  - **Canvi de distribució?**

- **Tractament. Fàrmacs orals**

The New England Journal of Medicine

VOLUME 343 OCTOBER 19, 2000 NUMBER 16

A COMPARISON OF GLYBURIDE AND INSULIN IN WOMEN WITH GESTATIONAL DIABETES MELLITUS

ODED LANGER, M.D., DEBORAH L. CONWAY, M.D., MICHAEL D. BERKUS, M.D., ELLY M.-J. XENAKIS, M.D., AND OLGA GONZALES, R.N.

… there has been one point of agreement: if diet and exercise do not lead to adequate glycemic control in a woman with GDM, then insulin should be given

Langer and his colleagues are to be congratulated for prudently defying conventional wisdom and showing the way to an alternative treatment for women with gestational diabetes

Michael Greene, accompanying editorial

Glibenclamide, metformin, and insulin for the treatment of GDM: a systematic review and meta-analysis

Balsells M. BMJ. 2015 Jan 21;350:h102

- **15 articles, 7 GLY vs INS, 6 MET vs INS, 2 MET vs GLY**
- **14 primary outcomes, 16 secondary**

Primary outcome

- **GLY vs INS**
  - **higher BW (109 g)**
  - **more macrosomia (RR 2.62)**
  - **more NN hypoglycaemia (RR 2.04)**
- **MET vs INS**
  - **less maternal weight gain (-1.14 kg)**
  - **lower GA at delivery (-0.16 weeks)**
  - **more preterm birth (RR 1.5)**
  - **trend for less NN hypoglycaemia (RR 0.78, p 0.09)**
- **MET vs GLY**
  - **less maternal weight gain (−2.06 kg)**
  - **lower BW (mean difference −209 g)**
  - **less macrosomia (RR 0.33) and LGA (RR 0.44)**

Coneixement insuficient

- **altres ADO**
- **combinacions**
- **impacte a mitjà-llarg termini**

- **Patient-important outcomes**

Table 4. Results of Questionnaire on Acceptability of Treatment.*

Question	Metformin Group (N=334)	Insulin Group (N=331)	P Value
	no. (%)		
How often did you forget to take your medication?†			<0.001
Never or rarely	231 (69.4)	267 (80.7)	
1–3 times/wk	81 (24.3)	52 (15.7)	
4–6 times/wk	12 (3.6)	2 (0.6)	
>6 times/wk	9 (2.7)	10 (3.0)	
Which medication would you choose in another pregnancy?			<0.001
Metformin tablets	256 (76.6)	127 (38.4)	
Insulin injections	42 (12.6)	90 (27.2)	
Not sure	36 (10.8)	114 (34.4)	
In another pregnancy, if you were told you were likely to need insulin injections to control the sugar levels but could try metformin first, what would you prefer?			<0.001
Start with metformin and add insulin if needed	270 (80.8)	179 (54.1)	
Go straight to insulin injections	36 (10.8)	94 (28.4)	
Not sure	28 (8.4)	58 (17.5)	
Which part of your diabetes treatment was the easiest?			<0.001
Doing finger-prick tests	74 (22.2)	119 (36.0)	
Being careful with diet	63 (18.9)	95 (28.7)	
Taking medication	197 (59.0)	117 (35.3)	
Which part of your diabetes treatment was the hardest?			0.001
Doing finger-prick tests	123 (36.8)	91 (27.5)	
Being careful with diet	176 (52.7)	150 (45.3)	
Taking medication	35 (10.5)	90 (27.2)	

- **Cost-benefici**

- **The benefit-to-cost ratio of the difference in input and outcome costs was 2.98 in favor of postprandial monitoring in the SoCal study**

  Kitzmiller JL. Assessment of costs and benefits of management of GDM. Diabetes Care 1998;21 Suppl 2:B123-30

- **Treating mild GDM was more expensive, more effective, and cost-effective at $20,412 per QALY**

  Ohno MS. Treating mild gestational diabetes mellitus: a cost-effectiveness analysis. Am J Obstet Gynecol. 2011;205:282.e1-7

- **Our model demonstrates that the IADPSG recommendations are cost-effective only when postdelivery care reduces diabetes incidence**

  Werner EF. Screening for GDM: are the criteria proposed by the IADPSG cost-effective? Diabetes Care. 2012;35(3):529-35

Conclusió

- Concepte
- Diagnòstic
- Cribat
- Tractament
  - monitorització
  - dieta
  - insulina
  - ADO
- Patient-important outcomes
- Cost-benefici

Conclusió

- **Concepte V**
- **Diagnòstic V**
- **Cribat V**
- **Tractament**
  - **monitorització V**
  - **dieta V**
  - **insulina V**
  - **ADO V**
- **Patient-important outcomes V**
- **Cost-benefici V**

Conclusió

- **Concepte V**
- **Diagnòstic V X**
- **Cribat V X**
- **Tractament**
  - **monitorització V X**
  - **dieta V X**
  - **insulina V X**
  - **ADO V X**
- **Patient-important outcomes V X**
- **Cost-benefici V X**