

XXIIè Congrés de la Societat Catalana d'Endocrinologia i Nutrició

RETINOPATIA DIABETICA COMO PREDICTOR DE PREECLAMPSIA

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INTRODUCCIÓN

- ¿Qué es la preeclampsia?
- Preeclampsia y diabetes
- ¿Qué dicen las guías?
- Protocolo actual en nuestro centro
- Preeclampsia y retinopatía
- Hipótesis y objetivos de nuestro trabajo

¿Qué es la preeclampsia?

- Síndrome caracterizado por:
 - hipertensión y proteinuria
 - o
 - hipertensión y disfunción de órgano diana
(con o sin proteinuria)
- Después de la semana 20 de gestación

Preeclampsia y diabetes

Las gestantes con DM1 tienen entre 2 y 4 veces (hasta 5-7*) más riesgo de PE y enfermedades hipertensivas del embarazo que la población general

Clinical Care/Education/Nutrition/Psychosocial Research
ORIGINAL ARTICLE

Optimal Glycemic Control, Pre-eclampsia, and Gestational Hypertension in Women With Type 1 Diabetes in the Diabetes and Pre-eclampsia Intervention Trial

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FOR THE DIABETES AND PRE-ECLAMPSIA
INTERVENTION TRIAL STUDY GROUP

The rates of pre-eclampsia are two to four times higher for women with type 1 diabetes than the background maternity population and are known to increase with the complexity of diabetes (1-3). Pre-eclampsia is a multisystem

Acta Diabetol
DOI 10.1007/s00592-012-0415-0

ORIGINAL ARTICLE

Pre-eclampsia and pregnancy-induced hypertension are associated with severe diabetic retinopathy in type 1 diabetes later in life

Daniel Gordin · Risto Kaaja · Carol Forsblom · Vilho Hiilesmaa · Kari Teramo · Per-Henrik Groop

THE JOURNAL OF MATERNAL-FETAL & NEONATAL MEDICINE, 2017
<https://doi.org/10.1080/14767058.2017.1331429>

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REVIEW ARTICLE

Prediction of preeclampsia in type 1 diabetes in early pregnancy by clinical predictors: a systematic review

Marianne Vestgaard^{a,b,c,*}, Miriam Colstrup Sommer^{a,b,*}, Lene Ringholm^d, Peter Damm^{a,c,e} and Elisabeth R. Mathiesen^{a,b,c}

Epidemiology/Health Services/Psychosocial Research
ORIGINAL ARTICLE

Pregnancy Outcome in Type 1 Diabetic Women With Microalbuminuria

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Diabetic nephropathy (urinary albumin excretion >300 mg/24 h) present at conception is a major contributor to increased perinatal morbidity and mortality

¿Qué dicen las guías?



Recommendation Summary

Population	Recommendation	Grade (What's This?)
Pregnant Women Who Are At High Risk for Preeclampsia	The USPSTF recommends the use of low-dose aspirin (81 mg/d) as preventive medication after 12 weeks of gestation in women who are at high risk for preeclampsia.	B

Preeclampsia and Aspirin

Recommendation

14.12 Women with type 1 or type 2 diabetes should be prescribed low-dose aspirin 60–150 mg/day (usual dose 81 mg/day) from the end of the first trimester until the baby is born in order to lower the risk of preeclampsia. **A**

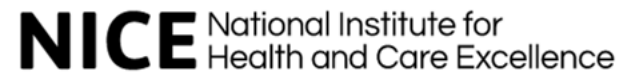


Table 1. Clinical Risk Assessment for Preeclampsia*

Risk Level	Risk Factors	Recommendation
High [†]	<ul style="list-style-type: none"> History of preeclampsia, especially when accompanied by an adverse outcome Multifetal gestation Chronic hypertension Type 1 or 2 diabetes Renal disease Autoimmune disease (systemic lupus erythematosus, antiphospholipid syndrome) 	Recommend low-dose aspirin if the patient has one or more of these high-risk factors

1.1.2 Advise pregnant women at high risk of pre-eclampsia to take 75–150 mg of aspirin^[a] daily from 12 weeks until the birth of the baby. Women at high risk are those with any of the following:

- hypertensive disease during a previous pregnancy
- chronic kidney disease
- autoimmune disease such as systemic lupus erythematosus or antiphospholipid syndrome
- type 1 or type 2 diabetes
- [chronic hypertension](#). [2010, amended 2019]



Protocolo actual en nuestro centro

- Para todas las gestantes: con o sin FR
- Valoración de arterias uterinas en ECO 1ºT
- Calculo de riesgo de PE:
<https://medicinafetalbarcelona.org/calc/>
- Profilaxis con AAS 150 mg/día las gestantes de alto riesgo de PE precoz (riesgo >1/100)

Calculadora medicina fetal

- 31 años, 4 años evolución DM1, 2^o gestación, HTA, IMC 25, HbA1c 6,2%

Preeclampsia 1T
Epidemiologic data

Parity:

Previous PE:

Hypertension:

Renal disease:

Coagulopathy:

Diabetes:

Ethnic group:

Biometric data

Age (years):

Height (cm):

Weight (kg):

First Trimester Data

CRL(mm):

PAPP-A(MoMs):

Systolic BP (mmHg):

Diastolic BP (mmHg):

IPmAUt:

Calculate

Risk early PE:

Calculadora medicina fetal

- 31 años, 23 años evolución DM1, 2º gestación, HTA, IMC 25, HbA1c 8,3%, RDNP moderada

Preeclampsia 1T
Epidemiologic data

Parity:

Previous PE:

Hypertension:

Renal disease:

Coagulopathy:

Diabetes:

Ethnic group:

Biometric data

Age (years):

Height (cm):

Weight (kg):

First Trimester Data

CRL(mm):

PAPP-A(MoMs):

Systolic BP (mmHg):

Diastolic BP (mmHg):

IPmAUt:

Calculate

Risk early PE:

Calculadora medicina fetal

- 31 años, 4 años evolución DM1, 2º gestación, HTA, IMC 25, HbA1c 6,2%, **Nefropatía diabética**

Preeclampsia 1T Epidemiologic data		Biometric data	
Parity:	Multipara	Age (years):	31
Previous PE:	No	Height (cm):	167
Hypertension:	Yes	Weight (kg):	71
Renal disease:	Yes	First Trimester Data	
Coagulopathy:	No	CRL(mm):	64
Diabetes:	Yes	PAPP-A(MoMs):	1.7
Ethnic group:	European	Systolic BP (mmHg):	130
		Diastolic BP (mmHg):	70
		IPmAUt:	1.24

Calculate

Risk early PE:

1/13

Preeclampsia y retinopatía

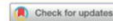
- Falta precisión al estimar el riesgo
 - Buscar marcadores/predictores
 - Ejemplo: **retinopatía diabética**
- 1º complicación microvascular = + frecuente
- RD precede habitualmente a ND
- Prevalencia 98% en DM1 a los 15 años
- Se asocia a complicaciones macrovasculares

Evidencia hasta el momento

THE JOURNAL OF MATERNAL-FETAL & NEONATAL MEDICINE, 2017
<https://doi.org/10.1080/14767058.2017.1331429>



REVIEW ARTICLE



Prediction of preeclampsia in type 1 diabetes in early pregnancy by clinical predictors: a systematic review

Marianne Vestgaard^{a,b,c*}, Miriam Colstrup Sommer^{a,b*}, Lene Ringholm^d, Peter Damm^{a,c,e} and Elisabeth R. Mathiesen^{a,b,c}

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Diabetic retinopathy

Two identified studies with 629 pregnancies in total found an association between retinopathy and preeclampsia (OR 1.9–2.9) [15,22].

Diabet Med. 2007 Nov;24(11):1229-34. Epub 2007 Aug 24.

Associations of Type 1 diabetes mellitus, maternal vascular disease and complications of pregnancy.

Howarth C¹, Gazis A, James D.

Am J Obstet Gynecol. 2008 Sep;199(3):278.e1-5. doi: 10.1016/j.ajog.2008.06.066.

The association of intrauterine growth abnormalities in women with type 1 diabetes mellitus complicated by vasculopathy.

Haeri S¹, Khoury J, Kovilam O, Miodovnik M.



Contents lists available at ScienceDirect

Taiwanese Journal of Obstetrics & Gynecology

journal homepage: www.tjog-online.com



Original Article

Association of the presence of microangiopathy with adverse pregnancy outcome in type 1 diabetes: A meta-analysis

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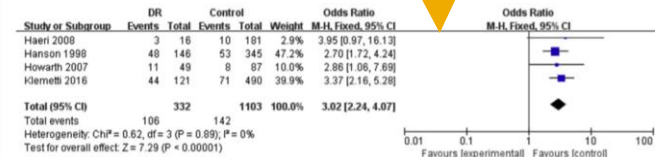


Fig. 4. Forest plot. Odds ratios of the DR for PE in T1DM.

Acta Obstet Gynecol Scand. 1998 Jul;77(6):620-4.

Epidemiology of pregnancy-induced hypertension and preeclampsia in type 1 (insulin-dependent) diabetic pregnancies in Sweden.

Hanson U¹, Persson B.

Diabetologia. 2016 Jan;59(1):92-100. doi: 10.1007/s00125-015-3787-1.

White's classification and pregnancy outcome in women with type 1 diabetes: a population-based cohort study.

Klemetti MM^{1,2}, Laivuori H^{3,4,5}, Tikkanen M³, Nuutila M³, Hiilesmaa V³, Teramo K³.

Hipótesis y objetivos

1. Falta precisión al calcular el riesgo de preeclampsia en las gestantes con DM
2. Existen marcadores de alteración vascular que no se están teniendo en cuenta (Retinopatía diabética)
3. Estudiar si existe asociación entre RD y PE en nuestras DM1 gestantes
4. Explorar posibles factores que influyan en desarrollo PE



MATERIAL Y MÉTODOS

- Estudio observacional, retrospectivo
- DM tipo 1 pregestación
- Embarazo y parto HUAV
- Enero 2010-junio 2019
- Gestaciones únicas
- Criterios de exclusión
 - Gestación finalizada <sem20
 - Tratamiento con AAS

Variables analizadas

- Edad
- Raza
- Tabaquismo
- IMC pregestacional
- HTA
- DLP
- Nuli/Multípara
- Antecedente de coagulopatía
- Preeclampsia previa
- Años evolución DM1
- HbA_{1c} 1º trimestre
- Clínica pregestacional/Permiso gestacional
- Retinopatía diabética
- Nefropatía diabética
- Modalidad de tratamiento

RESULTADOS

Estudio descriptivo

n = 63

PE = 11

No PE = 52

	PE (-)	PE (+)	p
Edad embarazo (x, s)	32.87 ± 4.40	31.64 ± 4.84	0.88
Años evolución DM1 (x, s)	16.35 ± 10.19	17.27 ± 6.88	0.092
IMC (x, s)	25.01 ± 4.39	26.34 ± 4.34	0.951
HbA1c (x, s)	6.94 ± 1.11	7.30 ± 1.53	0.174
Raza (caucásica) (n, %)	46 (88.5%)	11 (100%)	0.579
Fumadora (n, %)	17 (32.7%)	3 (27.3%)	1.0
Primigesta (n, %)	23 (44.2%)	7 (63.6%)	0.325
PE previa (n, %)	1 (1.9%)	0 (0%)	1.0
No clínica PRE (n, %)	18 (34.6%)	7 (63.6%)	0.096
No permiso gestación (n, %)	25 (48.1%)	7 (63.6%)	0.509
RD (n, %)	16 (30.8%)	5 (45.5%)	0.483
ND (n, %)	3 (5.8%)	1 (9.1%)	0.546
HTA (n, %)	2 (3.8%)	2 (18.2%)	0.137
DLP (n, %)	4 (7.7%)	0 (0%)	1.0
ICSI (n, %)	25 (48.1%)	6 (54.5%)	0.750

Estudio multivariante

		Beta	p
PE	HTA	0.261	0.046
$R^2 = 0.068$	Constante	-	0.010

*No entra en el modelo: Años de evolución DM1, HbA1C, acudir a clínica pregestacional

Conclusiones

1. RD y PE: mayor frecuencia de PE en pacientes con RD (24%) vs (14%) en no RD, sin alcanzar significación estadística



2. «HTA se asocia a PE de forma independiente»
3. Años de evolución, HbA_{1c}, HTA y falta de planificación del embarazo se podrían asociar con mas riesgo de PE

Discusión

- El pequeño tamaño muestral de nuestro estudio no nos ha permitido responder a nuestra hipótesis
- Dada la posibilidad de que la RD se asocie a PE creemos necesarios más estudios
- En espera de nuevas evidencias se debería plantear la antiagregación universal a todas las pacientes con diabetes como recomiendan las guías clínicas

Gracias