

Reunión Bibliográfica

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Sergio Ambiado

Association of Antenatal Corticosteroids and Magnesium Sulfate Therapy With Neurodevelopmental Outcome in Extremely Preterm Children

Gentle S, Carlo W et al for the Eunice Kennedy Shriver ,NICHD, Neonatal Research Network
Obstetrics & Gynecologic 2020;vol 135 (6) Junio : 1377

• RESULTADOS

- Con corticoides+ Sulfato Mg antenatal 813/2239 (36%) versus
- Sólo corticoides 225/508 (44,3%) Adjusted OR 0.73; 95% (0,58 – 0,91)
- Sólo Sulfato Mg 47/89 (53%) Adjusted OR 0.49; 95% (0,29 – 0,82)
- Sin corticoides ni Sulfato M g 121/251 (48,2%) Adjusted OR 0.66; 95% (0,49 – 0,89)
- Tasa de muerte también fue más baja con uso de corticoides + Sulfato de Mg
- Tasa de compromiso de severo de neurodesarrollo no fue diferente

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Table 1. Demographic and Clinical Characteristics by Exposure Group

Characteristic*	Antenatal Corticosteroids and Magnesium Sulfate (n=2,243)	Antenatal Corticosteroids Only (n=509)	Magnesium Sulfate Only (n=89)	No Antenatal Corticosteroids or Magnesium Sulfate (n=252)	P
Birth weight (g)	720 (605–840)	720 (590–850)	720 (600–840)	733 (601–850)	.86
Gestational age (wk)	25.3 (24.4–26.1)	25.1 (24.3–26.0)	25.1 (24.1–26.1)	25.0 (23.8–25.9)	<.001
Male sex	1,193 (53.2)	241 (47.5)	49 (55.1)	127 (50.4)	.11
Nonwhite race	1,095 (50.2)	248 (50.2)	44 (50.0)	142 (58.4)	.11
Multiple births	581 (25.9)	145 (28.5)	17 (19.1)	67 (26.6)	.28
SGA	205 (9.2)	43 (8.5)	7 (7.9)	6 (2.4)	<.001
Maternal education high school or less	383 (18.2)	100 (22.1)	23 (30.3)	62 (28.8)	<.001
No maternal private insurance	1,371 (61.3)	311 (61.8)	71 (79.8)	185 (73.4)	<.001

SGA, small for gestational age.

Data are median (interquartile range) or n (%) unless otherwise specified.

* Data missing for less than 1% of each characteristic with the exception of nonwhite race (3%) and maternal education (8%).

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Table 2. Comorbidities and Interventions of Enrolled Patients by Antenatal Corticosteroid and Magnesium Sulfate Exposure

Characteristic*	Antenatal Corticosteroids and Magnesium Sulfate	Antenatal Corticosteroids Only	Magnesium Sulfate Only	No Antenatal Corticosteroids or Magnesium Sulfate	P
Postnatal steroid use	484 (23.3)	98 (20.4)	12 (14.6)	35 (14.8)	.005
Early-onset culture-positive sepsis	53 (2.4)	19 (3.7)	1 (1.1)	12 (4.8)	.057
Late-onset culture-positive sepsis	638 (29.8)	127 (26.5)	20 (26.3)	50 (23.6)	.157
Meningitis	42 (1.9)	5 (1)	0 (0)	1 (0.4)	.149
Hypotension treatment	719 (32.1)	196 (38.5)	37 (41.6)	139 (55.2)	<.001
Indomethacin exposure [†]	894 (39.9)	217 (42.6)	28 (31.5)	104 (41.3)	.229
Necrotizing enterocolitis [‡]	249 (11.1)	64 (12.6)	10 (11.2)	21 (8.3)	.378
Physiologic BPD [§]	1,115 (61.0)	243 (64.0)	33 (55.9)	96 (58.2)	.459

BPD, bronchopulmonary dysplasia.

Data are n (%) unless otherwise specified.

* Data missing for less than 1% of each characteristic with the exception of postnatal steroid use (7%) and late-onset culture-positive sepsis (6%). Physiologic BPD is assessed only among survivors to 36 weeks of postmenstrual age (n=2,431), among whom data were missing for less than 1%.

[†] Indicates indomethacin exposure within first 24 hours of life.

[‡] Indicates proven necrotizing enterocolitis, with or without surgery.

[§] Defined at 36 weeks of corrected age as positive pressure support, supplemental FiO₂ greater than 0.30, or supplemental FiO₂ 0.30 or less with failed room air challenge.

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Table 3. Neurodevelopmental Outcomes by Antenatal Corticosteroid and Magnesium Sulfate Exposure

Outcome	Antenatal Corticosteroids and Magnesium Sulfate	Antenatal Corticosteroids Only	Magnesium Sulfate Only	No Antenatal Corticosteroid or Magnesium Sulfate
Outcomes at discharge*				
Grade 3–4 ICH	369 (17.1)	94 (19.4)	28 (34.6)	91 (38.6)
Any ICH [†]	718 (33.2)	168 (34.7)	42 (51.9)	134 (56.8)
Death	475 (21.2)	140 (27.5)	30 (33.7)	89 (35.3)
Any ICH or death	998 (44.8)	255 (50.3)	56 (62.9)	166 (65.9)
Any ICH in survivors	523 (29.8)	115 (31.3)	26 (44.1)	77 (47.2)
Grade 3–4 ICH or death	719 (32.3)	201 (39.6)	45 (50.6)	133 (52.8)
Grade 3–4 ICH in survivors	244 (13.9)	61 (16.6)	15 (25.4)	44 (27.0)
Outcomes at follow-up*				
Severe NDI [§] or death	813 (36.3)	225 (44.3)	47 (52.8)	121 (48.2)
Severe NDI [§]	309 (17.9)	76 (21.2)	15 (26.3)	28 (17.7)
Death	505 (22.5)	149 (29.3)	32 (36.0)	93 (36.9)
Severe cerebral palsy	49 (2.8)	12 (3.3)	1 (1.8)	6 (3.8)
Moderate to severe cerebral palsy [¶]	117 (6.7)	35 (9.7)	4 (7.1)	13 (8.2)
Moderate to severe cerebral palsy [¶] or death	621 (27.7)	184 (36.2)	36 (40.9)	106 (42.1)
Bayley-3 cognitive composite score less than 70	203 (11.8)	43 (12.1)	9 (15.8)	14 (8.9)
Bayley-3 motor composite score less than 70	225 (13.1)	59 (16.6)	11 (19.3)	22 (14.1)
Blindness ^{††}	12 (0.7)	1 (0.3)	0 (0)	0 (0)
Hearing impairment ^{**}	51 (2.9)	8 (2.2)	1 (1.8)	6 (3.8)

ICH, intracranial hemorrhage; NDI, neurodevelopmental impairment.

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Table 4. Odds Ratios of Neurodevelopmental Outcomes by Antenatal Corticosteroid and Magnesium Sulfate Exposure

Outcome	Antenatal Corticosteroids and Magnesium Sulfate				Antenatal Corticosteroids and Magnesium Sulfate (vs No Antenatal Corticosteroids or Magnesium Sulfate)	
	vs Antenatal Corticosteroids Only		vs Magnesium Sulfate Only		Unadjusted OR (95% CI)	Adjusted OR (95% CI)*
	Unadjusted OR (95% CI)	Adjusted OR (95% CI)*	Unadjusted OR (95% CI)	Adjusted OR (95% CI)*		
Outcomes at discharge						
Grade 3–4 ICH or death [†]	0.70 (0.57–0.86)	0.77 (0.61–0.96)	0.46 (0.29–0.72)	0.48 (0.30–0.79)	0.40 (0.31–0.52)	0.44 (0.33–0.59)
Death [†]	0.67 (0.53–0.83)	0.70 (0.55–0.89)	0.49 (0.30–0.80)	0.57 (0.33–0.97)	0.44 (0.33–0.59)	0.51 (0.37–0.70)
Grade 3–4 ICH [†]	0.84 (0.65–1.08)	0.92 (0.70–1.21)	0.41 (0.25–0.68)	0.41 (0.24–0.69)	0.33 (0.25–0.44)	0.35 (0.26–0.48)
Outcomes at follow-up						
Severe NDI [‡] or death [†]	0.69 (0.57–0.85)	0.73 (0.58–0.91)	0.47 (0.30–0.74)	0.49 (0.29–0.82)	0.57 (0.44–0.75)	0.66 (0.49–0.89)
Death [†]	0.66 (0.52–0.82)	0.69 (0.54–0.89)	0.47 (0.29–0.77)	0.55 (0.32–0.93)	0.44 (0.34–0.59)	0.51 (0.38–0.70)
Severe NDI [‡]	0.82 (0.61–1.09)	0.81 (0.60–1.10)	0.56 (0.29–1.07)	0.50 (0.25–0.98)	1.01 (0.65–1.55)	0.98 (0.62–1.55)
Moderate to severe cerebral palsy or death [†]	0.63 (0.51–0.78)	0.66 (0.53–0.84)	0.51 (0.32–0.82)	0.55 (0.33–0.92)	0.48 (0.36–0.63)	0.54 (0.40–0.73)
Moderate to severe cerebral palsy	0.64 (0.42–0.96)	0.62 (0.40–0.95)	0.90 (0.31–2.64)	0.78 (0.26–2.33)	0.77 (0.42–1.41)	0.72 (0.38–1.34)
Severe cerebral palsy	0.83 (0.43–1.58)	0.86 (0.44–1.70)	1.55 (0.21–11.52)	1.48 (0.20–11.18)	0.74 (0.31–1.75)	0.73 (0.30–1.79)
Bayley cognitive score less than 70	0.92 (0.64–1.32)	0.96 (0.65–1.42)	0.63 (0.29–1.39)	0.55 (0.24–1.23)	1.38 (0.78–2.45)	1.40 (0.76–2.54)
Bilateral hearing impairment	1.67 (0.77–3.60)	1.70 (0.78–3.71)	1.70 (0.21–13.56)	1.72 (0.21–14.02)	0.84 (0.35–2.02)	0.84 (0.34–2.08)

ICH, intraventricular hemorrhage; NDI, neurodevelopmental impairment.

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Table 5. Odds Ratios of Outcomes by Gestational Age and Antenatal Corticosteroid and Magnesium Sulfate Exposure*

Outcome	Antenatal Corticosteroids and Magnesium Sulfate				Antenatal Corticosteroids and Magnesium Sulfate (vs No Antenatal Corticosteroids or Magnesium Sulfate)	
	vs Antenatal Corticosteroids Only		vs Magnesium Sulfate Only		Unadjusted OR (CI)	Adjusted OR (CI)*
	Unadjusted OR (CI)	Adjusted OR (CI)*	Unadjusted OR (CI)	Adjusted OR (CI)*		
22–24 weeks of gestation						
Severe NDI [‡] or death [†]	0.79 (0.58–1.08)	0.81 (0.58–1.12)	0.2 (0.08–0.5)	0.21 (0.08–0.58)	0.48 (0.31–0.74)	0.61 (0.39–0.97)
Severe NDI ^{†‡}	0.96 (0.62–1.48)	0.98 (0.61–1.55)	0.2 (0.07–0.56)	0.19 (0.06–0.60)	0.88 (0.46–1.69)	1.01 (0.51–2.00)
25–26 weeks of gestation						
Severe NDI [‡] or death [†]	0.66 (0.5–0.87)	0.67 (0.49–0.90)	0.76 (0.41–1.43)	0.70 (0.36–1.36)	0.73 (0.5–1.07)	0.70 (0.47–1.06)
Severe NDI ^{†‡}	0.74 (0.5–1.1)	0.69 (0.46–1.03)	1.19 (0.43–3.29)	1.00 (0.36–2.81)	1.1 (0.6–2.02)	0.93 (0.50–1.73)

ICH, intracranial hemorrhage; NDI, neurodevelopmental impairment.

* All models were simultaneously adjusted for: gestational age (square root transformation), sex, small for gestational age, maternal health insurance status, maternal race, follow-up window, and center (as a random effect). Centers with low frequencies of severe cerebral palsy (less than 5) were pooled to counter the effects of small sample sizes. Outcome differences statistically significant if adjusted odds ratios between exposure groups exclude 1.

[†] Significant global test for differences among groups: 1) antenatal corticosteroids and magnesium sulfate, 2) antenatal corticosteroids only, 3) antenatal magnesium sulfate only, and 4) no antenatal corticosteroids or magnesium sulfate.

[‡] Severe neurodevelopmental impairment defined as one or more of the following: severe cerebral palsy, gross motor function level at least 4–5, motor or cognitive composite score less than 70 on Bayley Scales of Infant Development III, bilateral blindness (no useful vision in either eye), or bilateral hearing impairment even with amplification.

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- La exposición antenatal a corticoides y sulfato de magnesio en prematuros entre 22 0/7 y 26 6// semanas de edad gestacional se asoció a menores tasas de compromiso de neurodesarrollo o muerte y a menor muerte comparado exposición sólo a corticoides

Testeo para Infección Covid 19 en embarazadas y su acompañante en partos programados

Bianco A et al. Obstetrics & Gynecologic 2020;vol 0 n° 00 : 1 - 5

- Objetivo:
 - Evaluar tasa de infección Covid 19 con screening universal Covid 19 en embarazadas con plan de parto programado y la concordancia o discordancia de la tasa en acompañantes
 - Secundariamente se midió utilidad de screening en predecir síndrome de severa falla respiratoria
- Método: Estudio observacional que realizó testeo con PCR Covid 19 en embarazadas y acompañante en partos programados entre el 4-4-2020 y 15-04-2020 en Hospitales Mount Sinai , Nueva York. Resultado se obtenía en 4 h
 - 1 día previo a parto: Test Covid 19 + Encuesta telefónica
 - Si acompañante resultaba positiva para Test o encuesta: No podía entrar al parto. Se debía oportunidad de contactar otro familiar a quién se testaba para Covid 19
- Al ingreso a maternidad se repetía testeo
- En embarazadas admitidas con parto espontáneo también se realizó testeo a embarazada y acompañante. El análisis se realizó separadamente de partos programados
- Sensibilidad 85% especificidad 100% sensibilidad varia con técnica de tomar muestra
- En madres Covid (+) se realizó PCR Covid al RN a las 24 h. Si PCR (-) se repetía a las 48 h
- Análisis estadístico Kappa fue utilizado para medir concordancia enter test positivo de embarazadas y sus acompañantes

Testeo para Infección Covid 19 en embarazadas y su acompañante en partos programados

Bianco A et al. Obstetrics & Gynecologic 2020;vol 0 n° 00 : 1 - 5

Box 1. Telephone Screening Tool

All patients must answer these questions.

1. Do you have a fever or feel hot?
2. Do you have a cough, shortness of breath, or a sore throat?
3. Are you vomiting, or do you have diarrhea?
4. Do you have a rash?

Testeo para Infección Covid 19 en embarazadas y su acompañante en partos programados

Bianco A et al. Obstetrics & Gynecologic 2020;vol 0 n° 00 : 1 - 5

Table 1. Demographics of Patients Who Tested Positive or Negative for Coronavirus Disease 2019 (COVID-19) Infection

	COVID-19-Positive (n=24)	COVID-19-Negative (n=131)
Age (y)	32.7±6.4	33.7±6.0
Race		
African American	1 (4.2)	16 (12.2)
Asian	0	14 (10.7)
Caucasian	17 (70.8)	78 (59.5)
Hispanic	4 (16.7)	17 (13)
Other	2 (8.3)	6 (4.6)
Nulliparous	8 (33.3)	30 (22.9)

Data are mean±SD or n (%).

Testeo para Infección Covid 19 en embarazadas y su acompañante en partos programados

Bianco A et al. Obstetrics & Gynecologic 2020;vol 0 n° 00 : 1 - 5

- Embarazadas :158 . 155 aprobaron realizar testeo
 - 0/155 positiva con encuesta
 - 24/155 positiva PCR Covid 19 15% (CI 9.8 – 21,2%)
- Acompañantes: 146 . 155 aprobaron realizar testeo
 - 0/155 positiva con encuesta
 - 14/155 positiva PCR Covid 19 9.6% (CI 4.8 – 14.4%)
- Tasa de discordancia en embarazada- acompañante: 11/146 7,5%
- Tasa de concordancia en embarazada- acompañante: 135/146 92.5%

- En embarazadas Covid (+) con acompañante en el parto: 11/19 acompañantes fueron Covid (+) 58%
- En embarazadas Covid (-) con acompañante en el parto: 3/127 acompañantes fueron Covid (+) 2.4%

- Riesgo de que acompañante sea positivo: 55.5% (95% CI 33.2 – 77.9%)
- Valor predictivo negativo de encuesta 13/155 84.5% (embarazada);132/146 90.4% (acompañante)
- PCR Covid 19 fue negativa en todos los RN y ninguno presentó síntomas

Reactivation of SARS-CoV-2 after Recovery
Si Yoon Yoo, Youngseok Lee, Ga Hee Lee and Dong Hyun Kim*
Pediatrics International 2020; Mayo 18

- - Niño de 8 años hospitalizado 17 días por Covid. PCR se negativizó el día 8
 - Permanece en casa después del alta
 - Reingresa 14 días después del alta con síntomas respiratorios y mal apetito. PCR covid resulta positiva. Permaneció hospitalizado 11 días