Fiebre en menor de dos meses

Paciente menor de dos meses

- Mayor riesgo infecciones bacterianas graves
- Infecciones urinarias (no bacteriemia)
- Datos de laboratorio específicos
- Punciones lumbares

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A Prediction Model to Identify Febrile Infants ≤60 Days at Low Risk of Invasive Bacterial Infection

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Objetivo

- Diseñar un modelo de predicción clínica en lactantes < 60 días de vida con bajo riesgo de desarrollar IBI (Infección Bacteriana Invasiva)

Diseño del estudio

- Estudio de casos y controles en menores de 60 días
- Sin apariencia clínica de enfermedad
- T° rectal documentada > 38°C
- Guardias de 11 hospitales pediátricos
- Entre 01/07/2011 y 30/06/2016 (5 años)

Caso

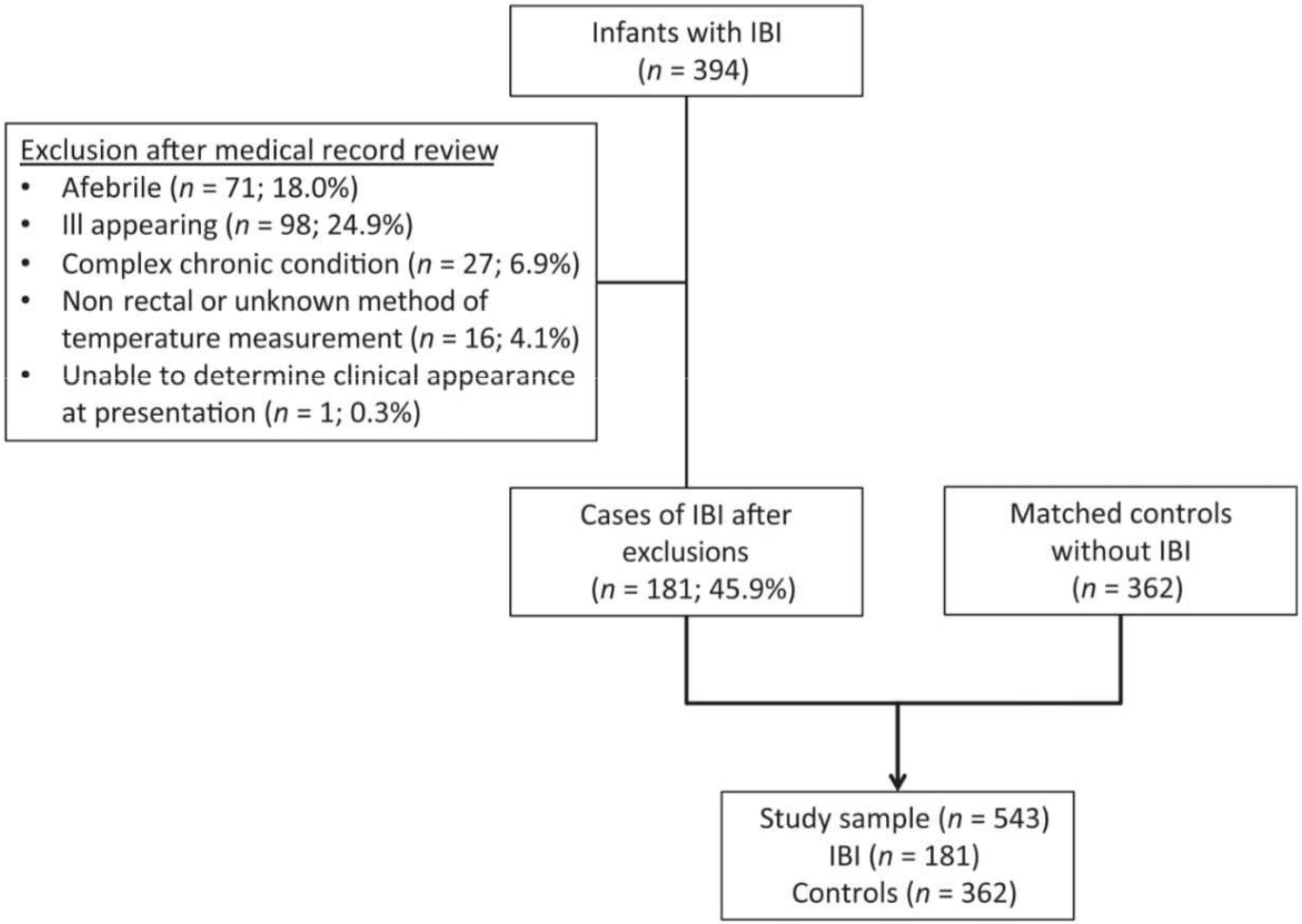
- Consulta a la guardia (no derivado)
- Febril (T° rectal >38°C documentada)
- Buen estado general
- Cultivos positivos (en sangre o LCR)
- Datos de laboratorio (ANCs, análisis orina)
- Excluidos: enf crónica , informes de cultivos contaminados

Control

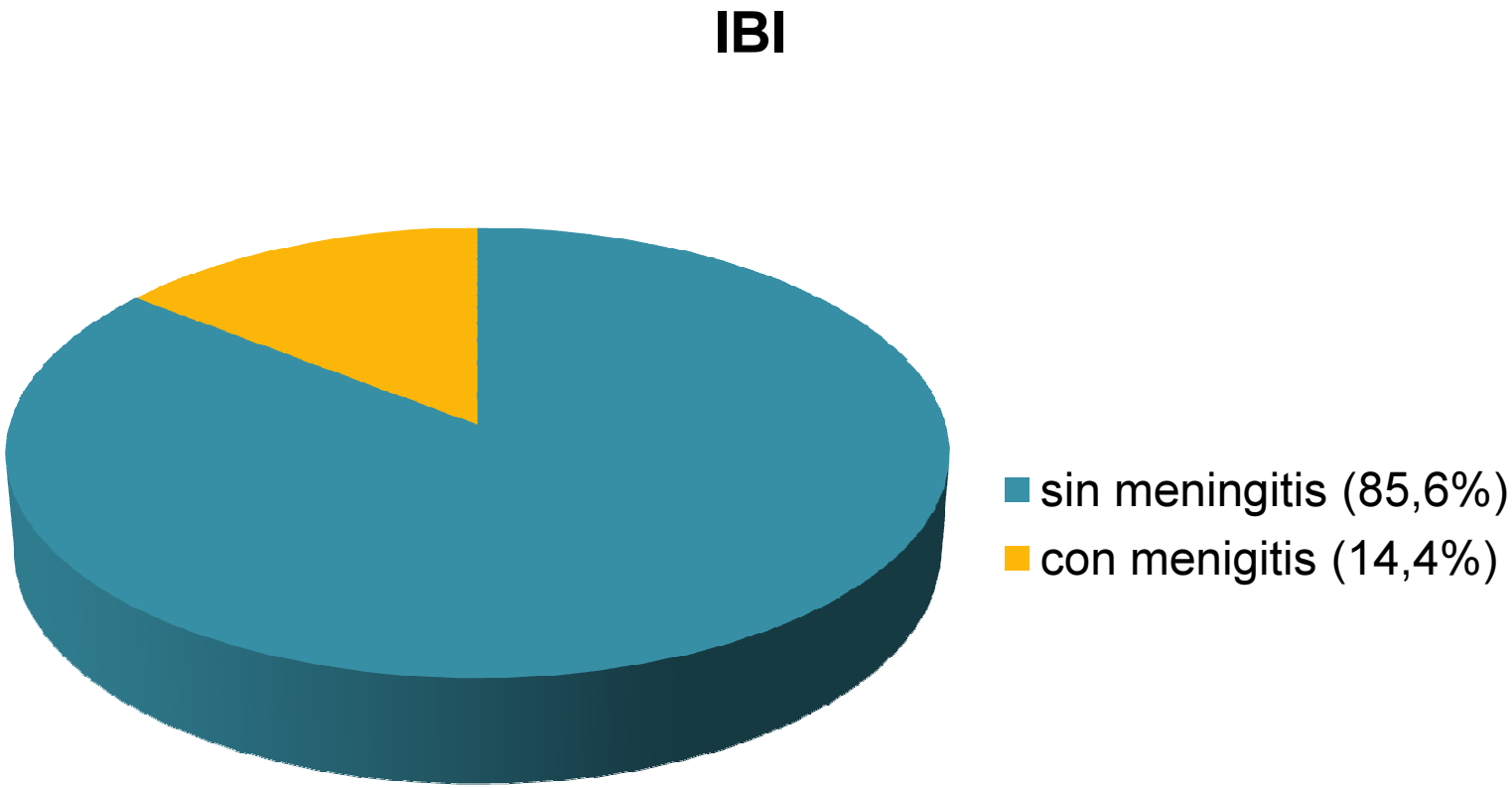
- 2 pacientes control que consultaron en la misma fecha
  (5 años) en la guardia pediátrica
- se obtuvieron cultivos de sangre y orina
- cultivos negativos
- no recibieron antibióticos 7 días previos

Resultados

- De los 394 niños con IBI en el período estudiado
- 181 casos (criterios)
- 362 controles


Infants with IBI
(n = 394)
Exclusion after medical record review
• Afebrile (n = 71; 18.0%)
• Ill appearing (n = 98; 24.9%)
• Complex chronic condition (n = 27; 6.9%)
• Non rectal or unknown method of temperature measurement (n = 16; 4.1%)
• Unable to determine clinical appearance at presentation (n = 1; 0.3%)
Cases of IBI after exclusions
(n = 181; 45.9%)
Matched controls without IBI
(n = 362)
Study sample (n = 543)
IBI (n = 181)
Controls (n = 362)

Según cultivos



Factores predictores asociados a IBI

TABLE 2 Multiple Logistic Regression Model to Predict IBI in Febrile Infants

	Adjusted Odds of IBI[a] (95% CI)
Age, d	
≥21	Reference
<21	2.07 (1.14–3.76)
Highest temperature in the ED, °C	
<38.0	Reference
38.0–38.4	2.31 (1.08–4.95)
≥38.5	6.57 (3.25–13.29)
Urinalysis result	
Normal	Reference
Abnormal[b]	5.71 (3.24–10.06)
ANC, cells per μL	
<5185	Reference
≥5185	3.15 (1.83–5.43)

[a] Adjusted for age, highest temperature recorded in the ED, urinalysis, and ANC, with study site as a fixed effect.

[b] Urine dipstick with positive leukocyte esterase or positive nitrites or urine microscopy with >5 WBCs per high-power filed or >5 WBCs per mm^3 on enhanced urinalysis.

Score IBI

TABLE 3 IBI Score

Predictor	Points[a]
Age <21 d	1
Highest temperature in the ED 38.0–38.4°C	2
Highest temperature in the ED ≥38.5°C	4
Abnormal urinalysis result[b]	3
ANC ≥5185 cells per μL	2

[a] Total possible scores range from 0 to 10.

[b] Urine dipstick with positive leukocyte esterase or positive nitrites or urine microscopy with >5 WBCs per high-power field or >5 WBCs per mm^3 on enhanced urinalysis.

Riesgo de IBI

TABLE 4 Performance Characteristics of the IBI Score for Identification of Febrile Infants With IBI

Points	Case Patients (N = 169),[a] n (%)	Control Patients (N = 323),[b] n (%)	IBI Score	Sensitivity (95% CI)	Specificity (95% CI)	LR+ (95% CI)	LR− (95% CI)
Low risk							
0	1 (0.6)	81 (25.1)	≥1	99.4 (96.7–100.0)	25.1 (20.4–30.2)	1.33 (1.24–1.41)	0.02 (0–0.17)
1	1 (0.6)	20 (6.2)	≥2	98.8 (95.8–99.9)	31.3 (26.3–36.6)	1.44 (1.33–1.55)	0.04 (0.01–0.15)
Moderate risk							
2	10 (5.9)	67 (20.7)	≥3	92.9 (87.9–96.3)	52.0 (46.4–57.6)	1.94 (1.72–2.18)	0.14 (0.08–0.24)
3	8 (4.7)	17 (5.3)	≥4	88.2 (82.3–92.6)	57.3 (51.7–62.7)	2.06 (1.80–2.37)	0.21 (0.14–0.32)
Higher risk							
4	26 (15.4)	58 (18.0)	≥5	72.8 (65.4–79.3)	75.2 (70.2–79.8)	2.94 (2.38–3.63)	0.36 (0.28–0.47)
5	20 (11.8)	30 (9.3)	≥6	60.9 (53.2–68.3)	84.5 (80.1–88.3)	3.94 (2.97–5.22)	0.46 (0.38–0.56)
6	27 (16.0)	20 (6.2)	≥7	45.0 (37.3–52.8)	90.7 (87.0–93.6)	4.84 (3.31–7.08)	0.61 (0.53–0.70)
7	31 (18.3)	21 (6.5)	≥8	26.6 (20.1–34.0)	97.2 (94.8–98.7)	9.56 (4.79–19.07)	0.75 (0.69–0.83)
8	4 (2.4)	0 (0)	≥9	24.3 (18.0–31.4)	97.2 (94.8–98.7)	8.71 (4.34–17.48)	0.78 (0.71–0.85)
9	30 (17.8)	7 (2.2)	10	6.5 (3.3–11.3)	99.4 (97.8–99.9)	10.51 (2.36–46.88)	0.94 (0.90–0.98)
10	11 (6.5)	2 (0.6)	—	—	—	—	—

LR+, positive likelihood ratio; LR−, negative likelihood ratio; —, not applicable.

[a] Twelve case patients with IBI for whom score could not be calculated because of missing data.

[b] Thirty-nine control patients without IBI for whom score could not be calculated because of missing data.

Discusión

- Los pacientes con antecedentes de fiebre, análisis de orina normal y ANC < 5185/ml tuvieron muy baja posibilidad de IBI.
- El puntaje <2 evitaría internaciones y punciones lumbares en niños que no desarrollarán IBI.
- Entre 1000 bebés febriles con score <2 , sólo 1 desarrollará IBI.
- Se evitaría la internación y PL de 300 niños.

Conclusiones

Un score clínico que incluya

- Edad
- Mayor T° documentada
- Análisis de orina
- Recuento absoluto de neutrófilos

podría ser utilizado por los clínicos para identificar a lactantes febriles con bajo riesgo de desarrollar IBI y/o meningitis

Muchas Gracias