VII Workshop para o controle da tuberculose em Minas Gerais

SUS SAÚDE MINAS GERAIS
GOVERNO DIFERENTE. ESTADO EFICIENTE.

Preditores epidemiológicos e biológicos para desfecho desfavorável no tratamento da TB

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O QUE ABORDAREMOS HOJE?

- **O que influencia** no desfecho de tratamento anti-TB;
- **Principais desfechos desfavoráveis** de tratamento anti-TB;
- Quais são os **fatores ambientais e epidemiológicos** associados aos desfechos;
- Quais são os **fatores biológicos** associados aos desfechos;

CONTEXTUALIZAÇÃO

10.8 milhões

de pessoas estão
com tuberculose
ativa no mundo

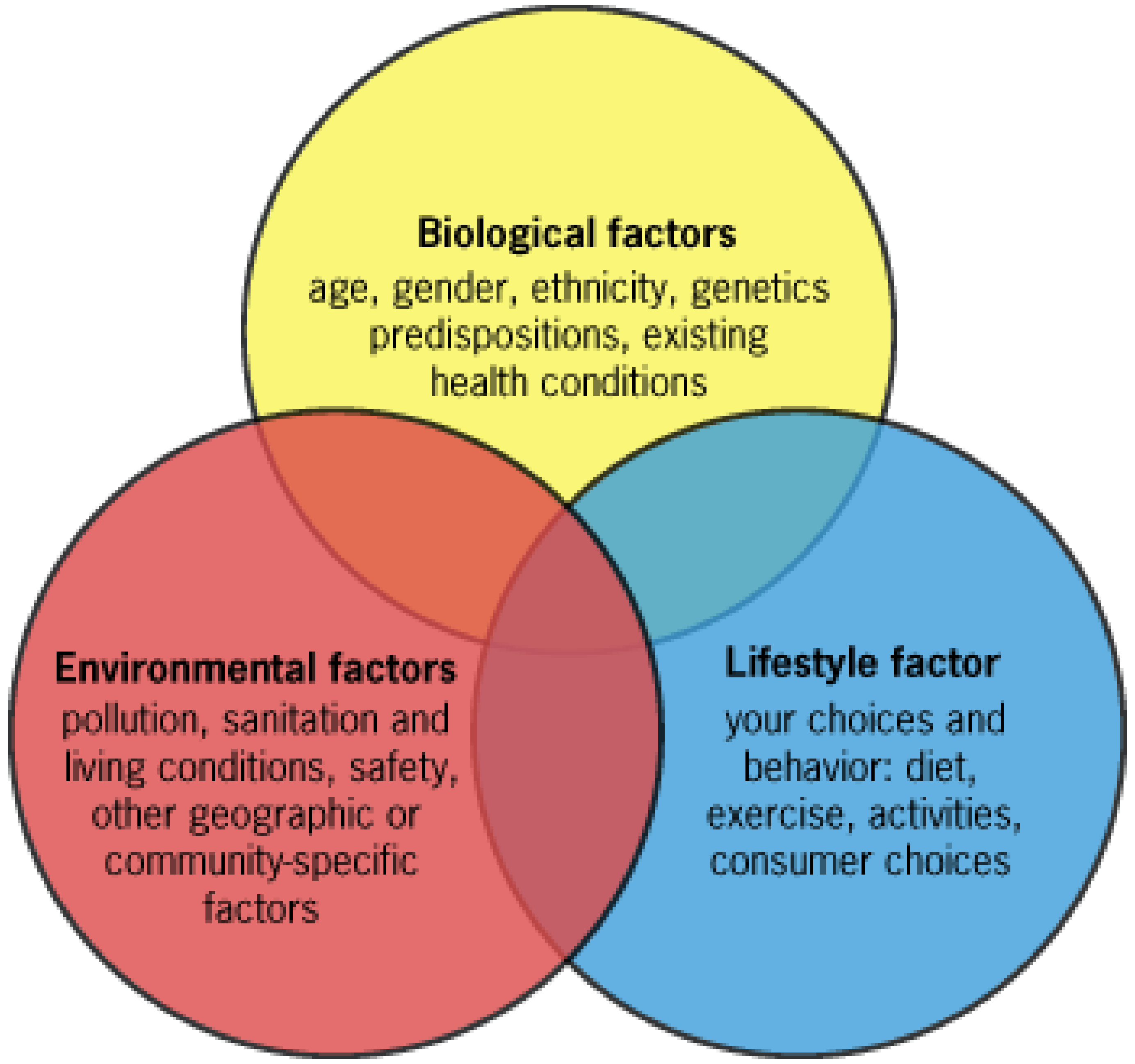
- **Fatores** que causam impacto na progressão e no **desfecho de tratamento anti-TB.**
  - Biológicos do hospedeiro;
  - Biológicos do patógeno;
  - Fatores ambientais/epidemiológicos/sociais;

- **Desfechos desfavoráveis**:
  - Falha de tratamento;
  - Casos Relapsos;
  - Óbito;

CONTEXTUALIZAÇÃO

- A **associação** desses fatores entre si e com os desfechos de tratamento é **complexa** e exige uma investigação ampla;

- Novas abordagens precisam ser utilizadas para **identificar preditores de desfecho** e **guiar políticas públicas** a fim de melhorar o desfecho desses pacientes;


Biological factors
age, gender, ethnicity, genetics predispositions, existing health conditions
Environmental factors
pollution, sanitation and living conditions, safety, other geographic or community-specific factors
Lifestyle factor
your choices and behavior: diet, exercise, activities, consumer choices

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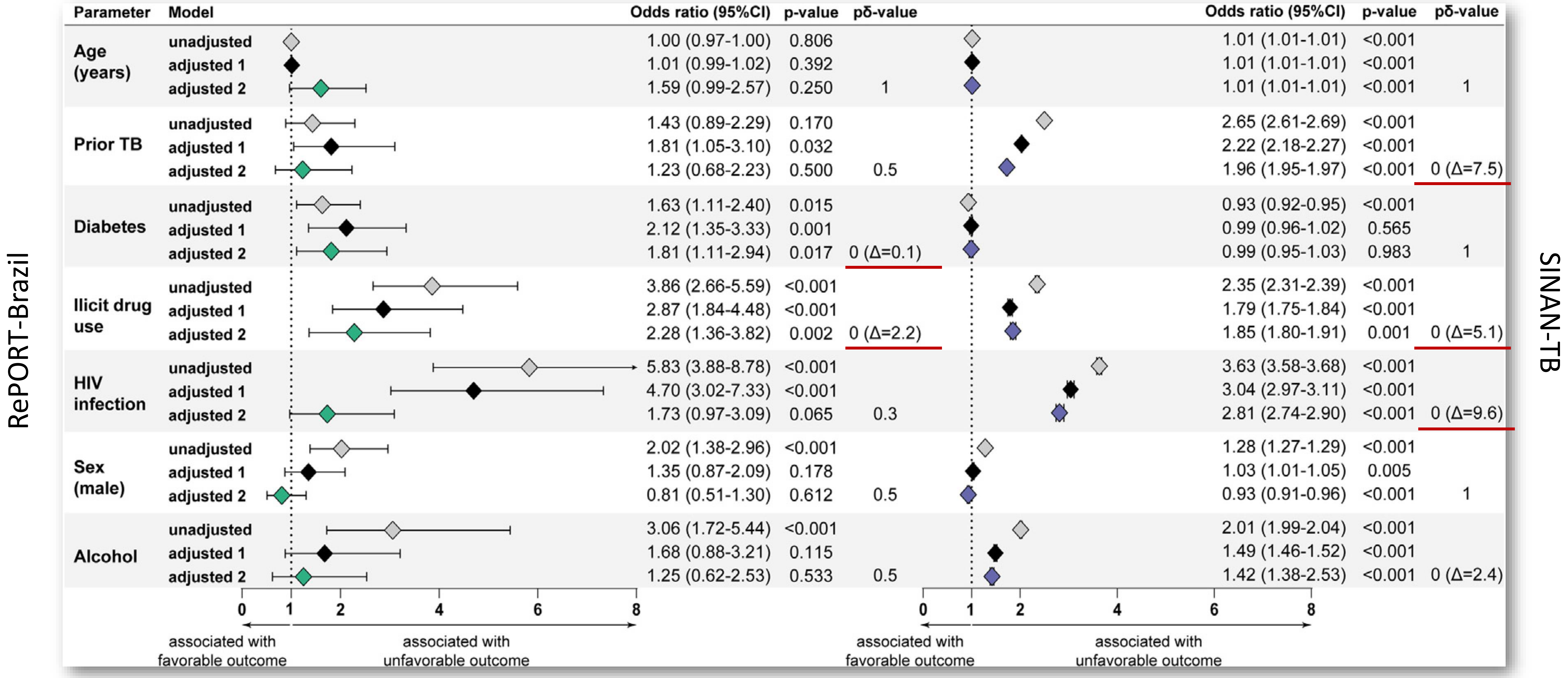
PREDITORES EPIDEMIOLÓGICOS DE **DESFECHO DESFAVORÁVEIS**

COORTE DO REPORT-BRAZIL E DADOS DO SINAN-TB



Parameter	Model	Odds ratio (95%CI)	p-value	pδ-value	Odds ratio (95%CI)	p-value	pδ-value
Age (years)	unadjusted	1.00 (0.97-1.00)	0.806		1.01 (1.01-1.01)	<0.001	
	adjusted 1	1.01 (0.99-1.02)	0.392		1.01 (1.01-1.01)	<0.001	
	adjusted 2	1.59 (0.99-2.57)	0.250	1	1.01 (1.01-1.01)	<0.001	1
Prior TB	unadjusted	1.43 (0.89-2.29)	0.170		2.65 (2.61-2.69)	<0.001	
	adjusted 1	1.81 (1.05-3.10)	0.032		2.22 (2.18-2.27)	<0.001	
	adjusted 2	1.23 (0.68-2.23)	0.500	0.5	1.96 (1.95-1.97)	<0.001	0 (Δ=7.5)
Diabetes	unadjusted	1.63 (1.11-2.40)	0.015		0.93 (0.92-0.95)	<0.001	
	adjusted 1	2.12 (1.35-3.33)	0.001		0.99 (0.96-1.02)	0.565	
	adjusted 2	1.81 (1.11-2.94)	0.017	0 (Δ=0.1)	0.99 (0.95-1.03)	0.983	1
Ilicit drug use	unadjusted	3.86 (2.66-5.59)	<0.001		2.35 (2.31-2.39)	<0.001	
	adjusted 1	2.87 (1.84-4.48)	<0.001		1.79 (1.75-1.84)	<0.001	
	adjusted 2	2.28 (1.36-3.82)	0.002	0 (Δ=2.2)	1.85 (1.80-1.91)	0.001	0 (Δ=5.1)
HIV infection	unadjusted	5.83 (3.88-8.78)	<0.001		3.63 (3.58-3.68)	<0.001	
	adjusted 1	4.70 (3.02-7.33)	<0.001		3.04 (2.97-3.11)	<0.001	
	adjusted 2	1.73 (0.97-3.09)	0.065	0.3	2.81 (2.74-2.90)	<0.001	0 (Δ=9.6)
Sex (male)	unadjusted	2.02 (1.38-2.96)	<0.001		1.28 (1.27-1.29)	<0.001	
	adjusted 1	1.35 (0.87-2.09)	0.178		1.03 (1.01-1.05)	0.005	
	adjusted 2	0.81 (0.51-1.30)	0.612	0.5	0.93 (0.91-0.96)	<0.001	1
Alcohol	unadjusted	3.06 (1.72-5.44)	<0.001		2.01 (1.99-2.04)	<0.001	
	adjusted 1	1.68 (0.88-3.21)	0.115		1.49 (1.46-1.52)	<0.001	
	adjusted 2	1.25 (0.62-2.53)	0.533	0.5	1.42 (1.38-2.53)	<0.001	0 (Δ=2.4)

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DADOS DO SINAN-TB DE ACORDO COM A FAIXA ETÁRIA

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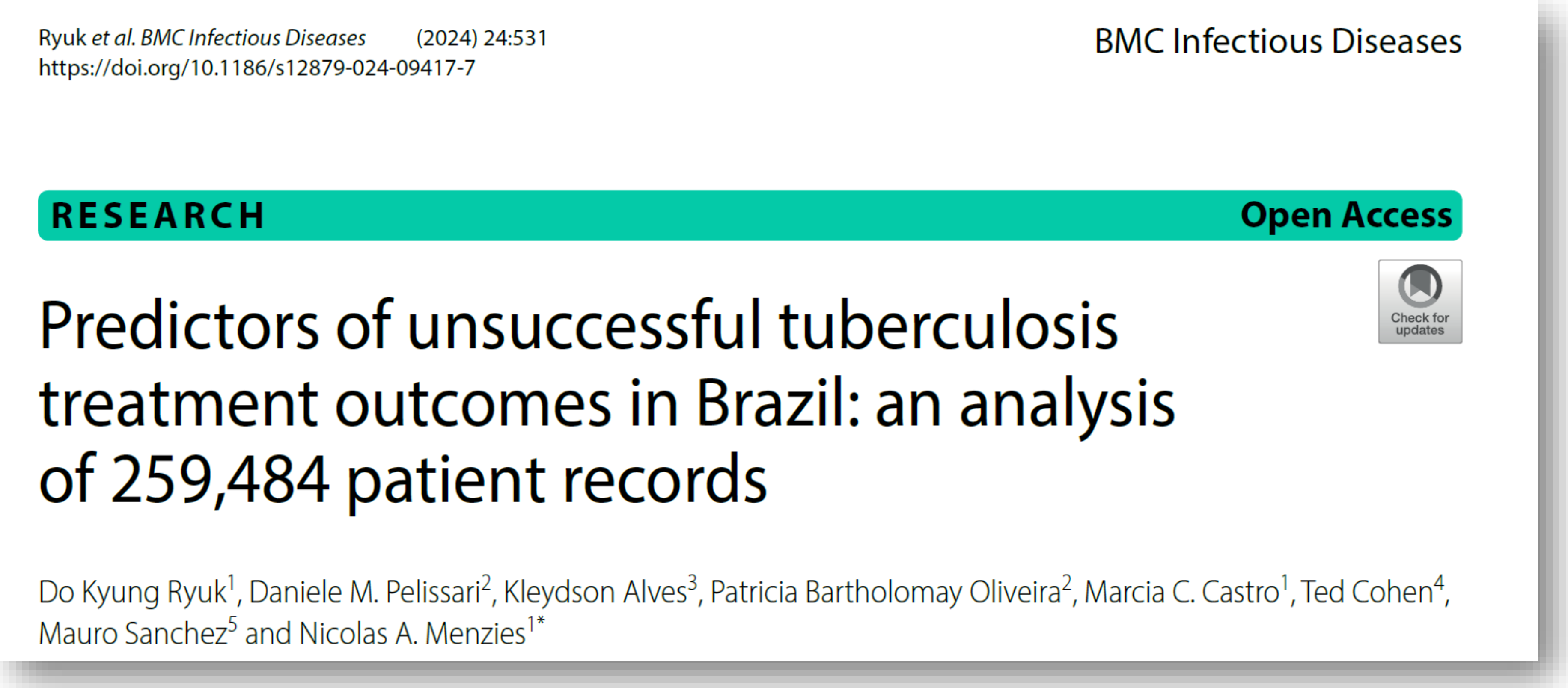
DADOS DO SINAN-TB



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BMC Infectious Diseases

RESEARCH **Open Access**

Predictors of unsuccessful tuberculosis treatment outcomes in Brazil: an analysis of 259,484 patient records

Do Kyung Ryuk[1], Daniele M. Pelissari[2], Kleydson Alves[3], Patricia Bartholomay Oliveira[2], Marcia C. Castro[1], Ted Cohen[4], Mauro Sanchez[5] and Nicolas A. Menzies[1*]

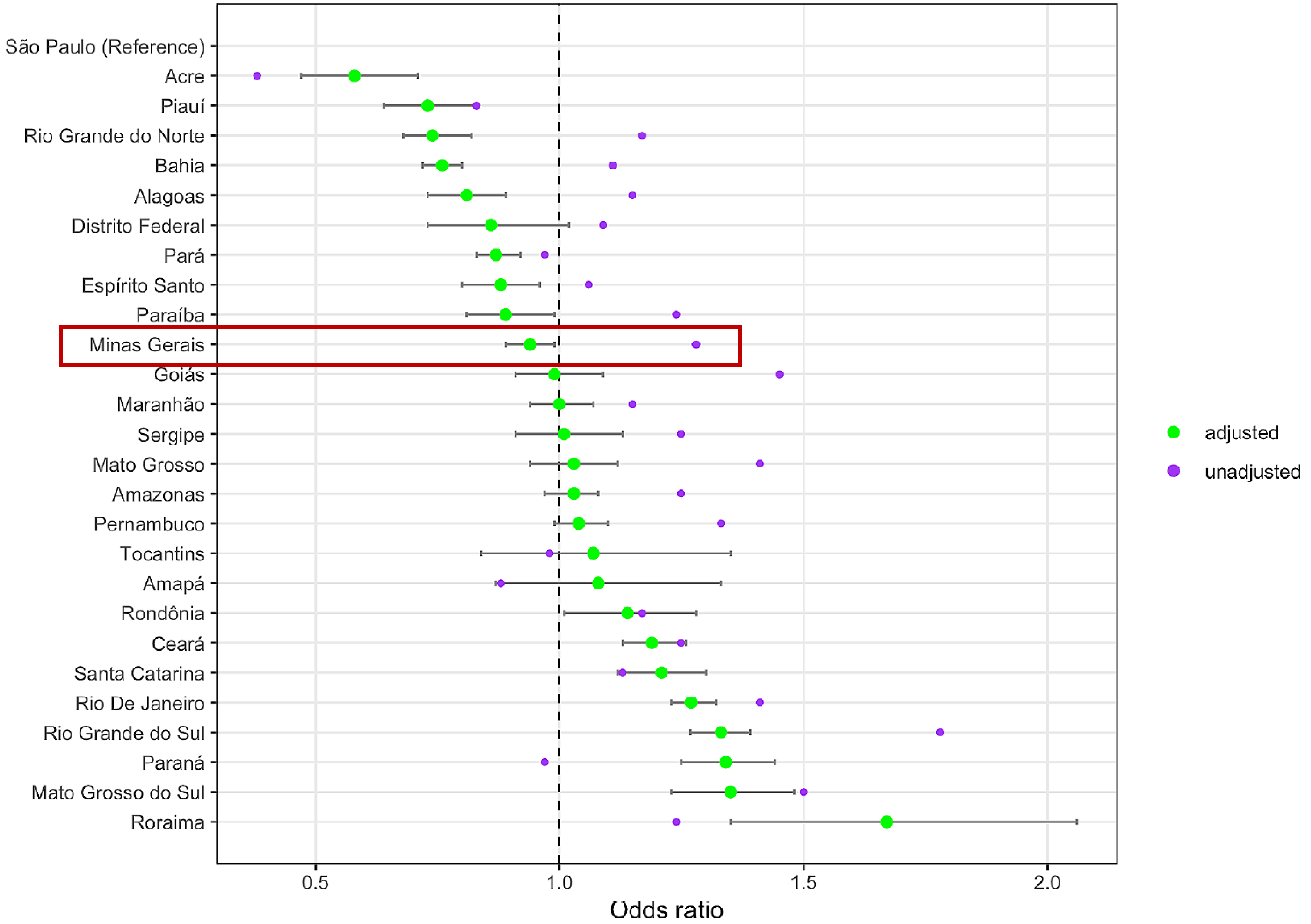

Fig. 1 Unadjusted and adjusted odds ratios of unsuccessful treatment for each state, 2015–2018. Unadjusted odds ratios estimated from regression models including each exposure variable individually. Adjusted odds ratios estimated from a regression model including all exposure variables. Horizontal bars represent 95% confidence intervals for adjusted odds ratios

PREDITORES CLÍNICOS DE
DESFECHO DESFAVORÁVEIS: anemia

DADOS DO REPORT-BRASIL

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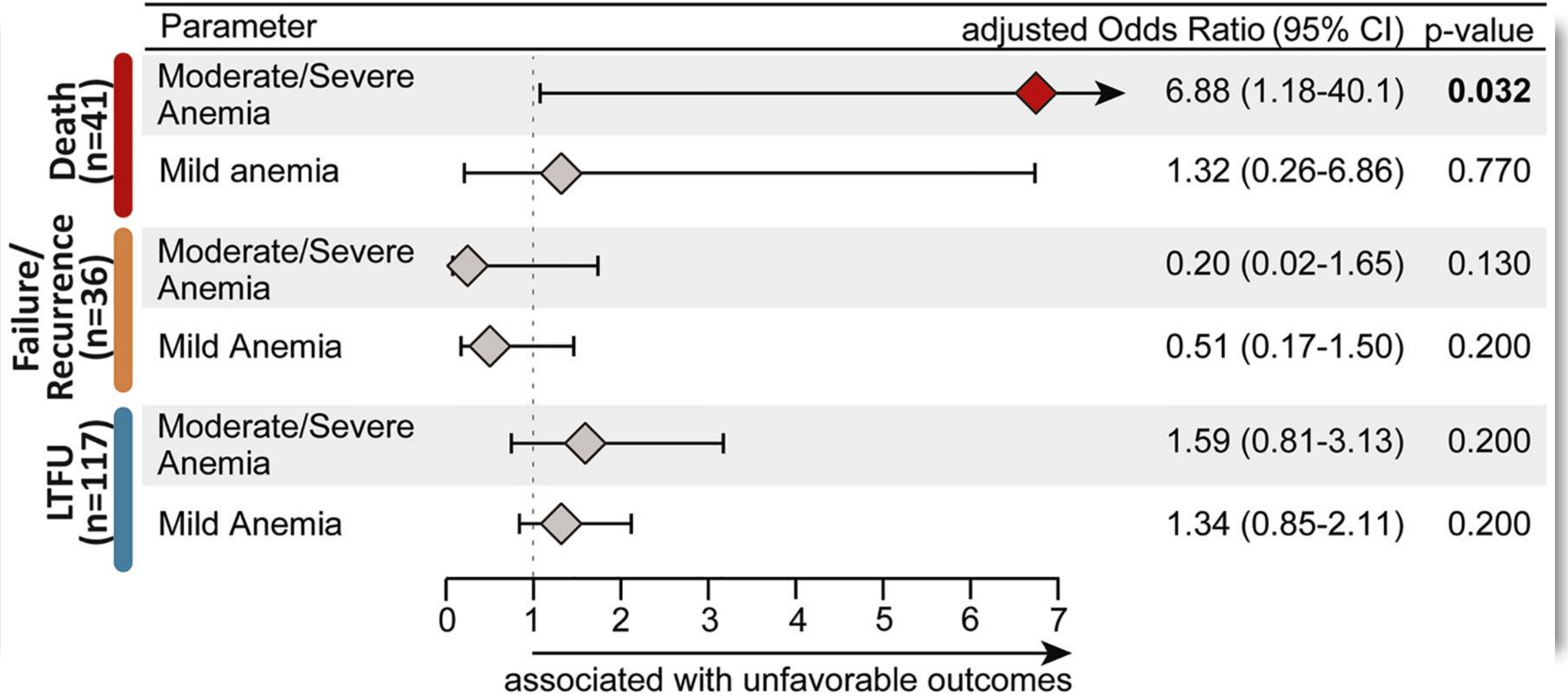
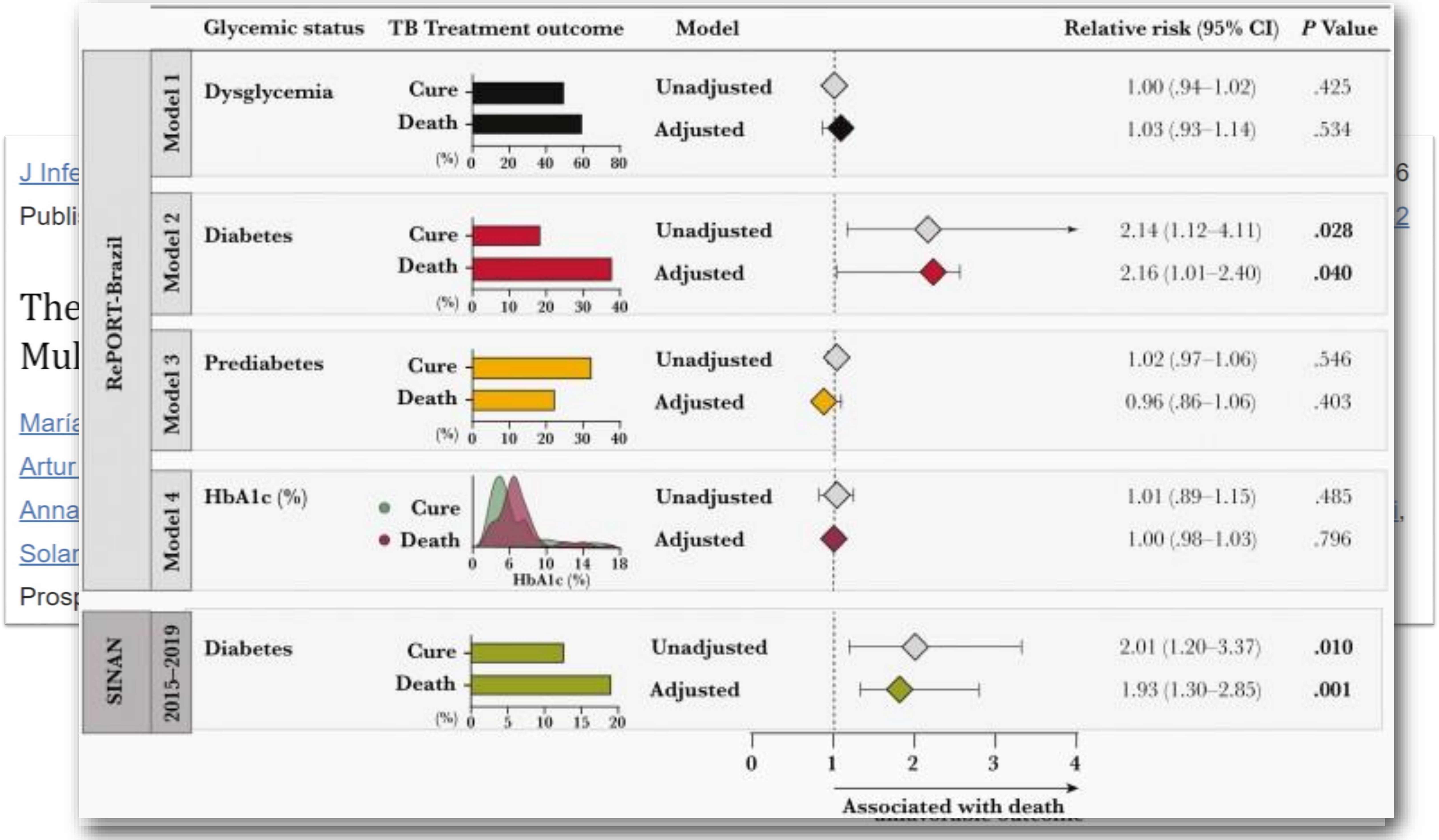


	Parameter	adjusted Odds Ratio (95% CI)	p-value
Death (n=41)	Moderate/Severe Anemia	6.88 (1.18-40.1)	**0.032**
	Mild anemia	1.32 (0.26-6.86)	0.770
Failure/ Recurrence (n=36)	Moderate/Severe Anemia	0.20 (0.02-1.65)	0.130
	Mild Anemia	0.51 (0.17-1.50)	0.200
LTFU (n=117)	Moderate/Severe Anemia	1.59 (0.81-3.13)	0.200
	Mild Anemia	1.34 (0.85-2.11)	0.200

PREDITORES CLÍNICOS DE
DESFECHO DESFAVORÁVEIS: diabetes

DADOS DO REPORT-BRASIL



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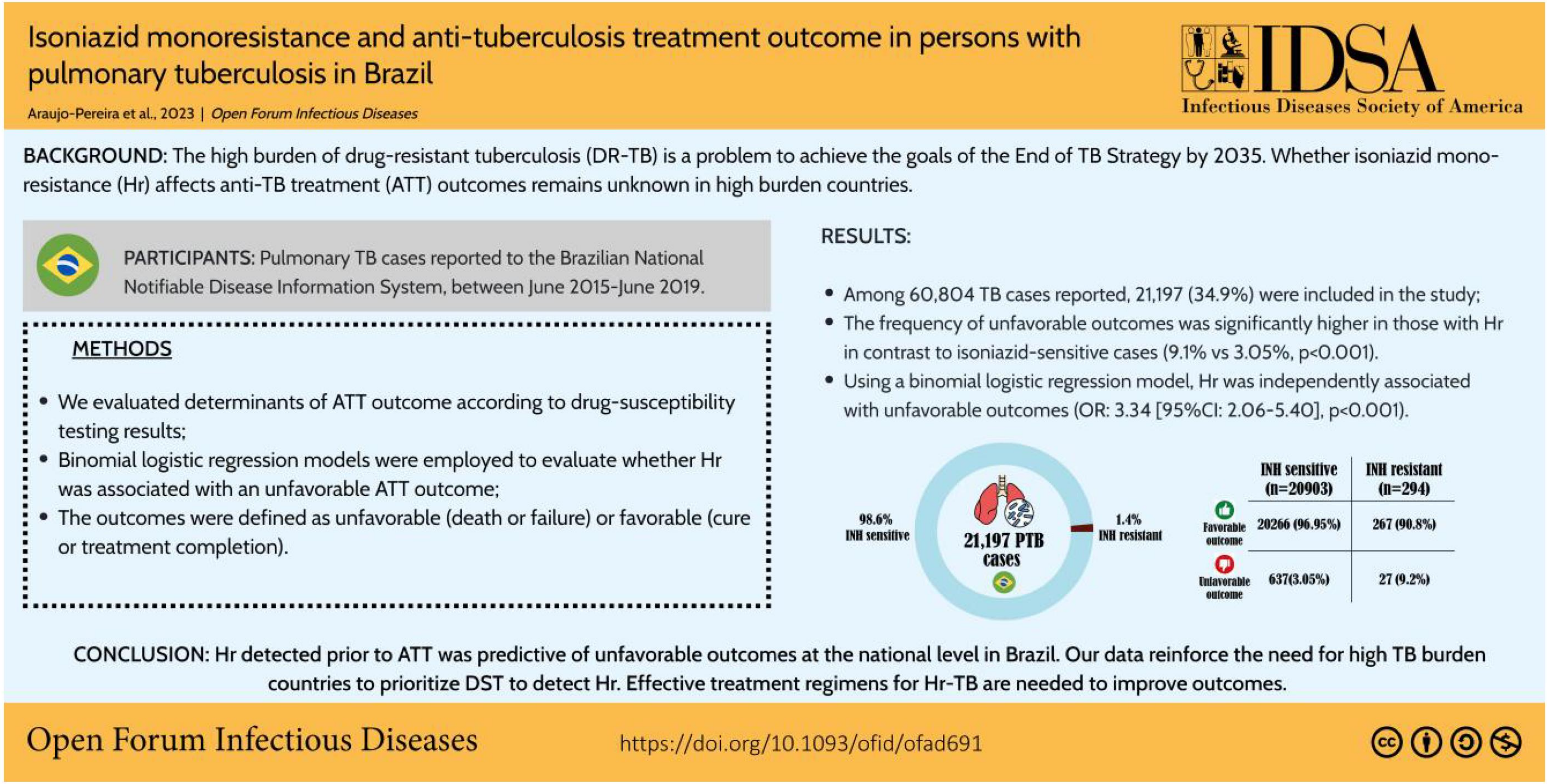
PREDITORES MICROBIOLÓGICOS DE **DESFECHO DESFAVORÁVEIS**

DADOS DO SINAN



Isoniazid monoresistance and anti-tuberculosis treatment outcome in persons with pulmonary tuberculosis in Brazil

Araujo-Pereira et al., 2023 | *Open Forum Infectious Diseases*

IDSA
Infectious Diseases Society of America

BACKGROUND: The high burden of drug-resistant tuberculosis (DR-TB) is a problem to achieve the goals of the End of TB Strategy by 2035. Whether isoniazid mono-resistance (Hr) affects anti-TB treatment (ATT) outcomes remains unknown in high burden countries.

PARTICIPANTS: Pulmonary TB cases reported to the Brazilian National Notifiable Disease Information System, between June 2015-June 2019.

METHODS

- We evaluated determinants of ATT outcome according to drug-susceptibility testing results;
- Binomial logistic regression models were employed to evaluate whether Hr was associated with an unfavorable ATT outcome;
- The outcomes were defined as unfavorable (death or failure) or favorable (cure or treatment completion).

RESULTS:

- Among 60,804 TB cases reported, 21,197 (34.9%) were included in the study;
- The frequency of unfavorable outcomes was significantly higher in those with Hr in contrast to isoniazid-sensitive cases (9.1% vs 3.05%, p<0.001).
- Using a binomial logistic regression model, Hr was independently associated with unfavorable outcomes (OR: 3.34 [95%CI: 2.06-5.40], p<0.001).

	INH sensitive (n=20903)	INH resistant (n=294)
Favorable outcome	20266 (96.95%)	267 (90.8%)
Unfavorable outcome	637(3.05%)	27 (9.2%)

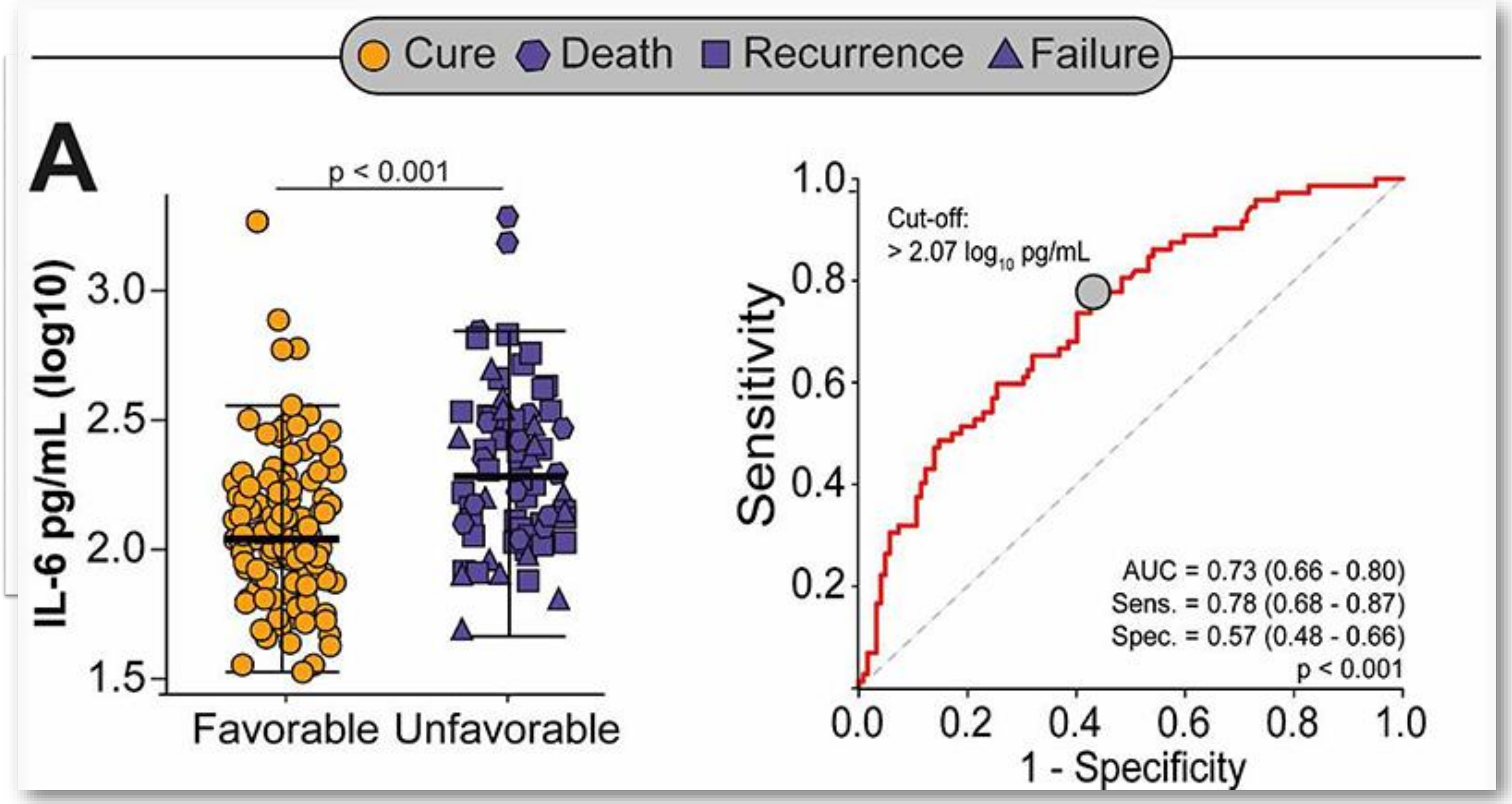
CONCLUSION: Hr detected prior to ATT was predictive of unfavorable outcomes at the national level in Brazil. Our data reinforce the need for high TB burden countries to prioritize DST to detect Hr. Effective treatment regimens for Hr-TB are needed to improve outcomes.

Open Forum Infectious Diseases

https://doi.org/10.1093/ofid/ofad691

PREDITORES IMUNOLÓGICO DE **DESFECHO DESFAVORÁVEIS**

DADOS DO REPORT-BRASIL



TAKE HOME

1. Abordagem Integrativa: A TB é uma doença **complexa**, e sua abordagem requer uma **avaliação integrada** que leve em consideração preditores epidemiológicos, clínicos, demográficos, sociais e biológicos.

2. Identificação de Preditores: **Investimento** na área da pesquisa voltada para a exploração de dados e técnicas estatísticas para **identificar preditores significativos** que influenciam os desfechos do tratamento.

3. Prevenção e Educação: Além do tratamento, **estratégias de prevenção e educação** são fundamentais para combater a TB, reduzir hábitos de consumo ruins, e consequentemente reduzir desfechos desfavoráveis.

4. Colaboração Global: A luta contra a TB é um esforço global. A **colaboração** entre profissionais de saúde, pesquisadores e governos é **essencial** para enfrentar esse desafio.

OBRIGADA!

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