Bronquiolitis Obliterante

Pos-infecciosa:

Hospital de Niños R. Gutiérrez

Buenos Aires

Alejandro J. Colom

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Centro Respiratorio


• Age at acu
• Days of
• Length
• Use of
• Pulm
and air
•Statist
• Res
• Med
were
group
was
• An
versio

Bronquiolitis Obliterante Pos-infecciosa: *desarrollo y pronóstico*

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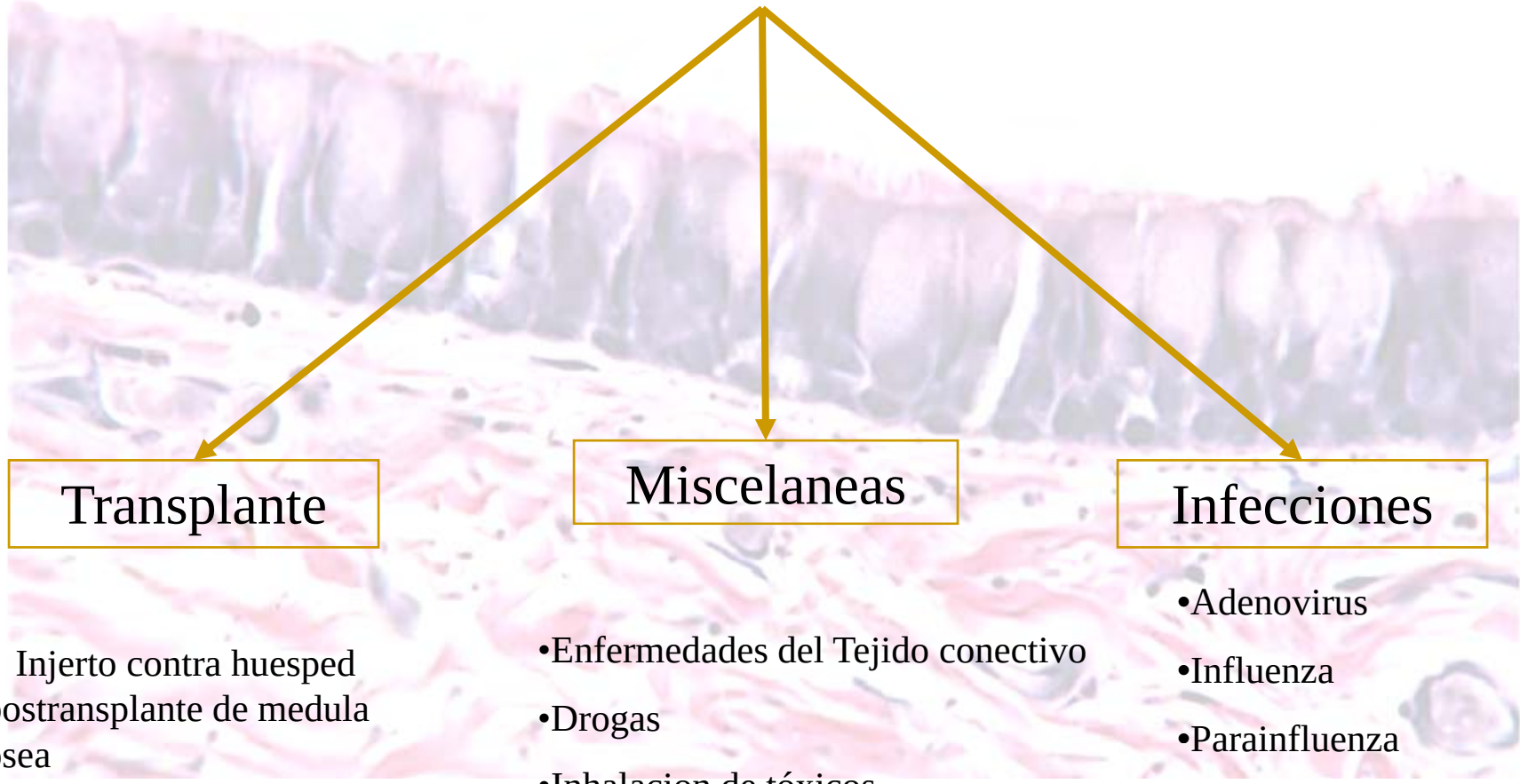
Bronquiolitis Obliterante

Injuria de la vía aérea



Transplante

- Injerto contra huesped postransplante de medula osea
- Rechazo crónico postransplante pulmonar

Miscelaneas

- Enfermedades del Tejido conectivo
- Drogas
- Inhalacion de tóxicos
- Aspiracion

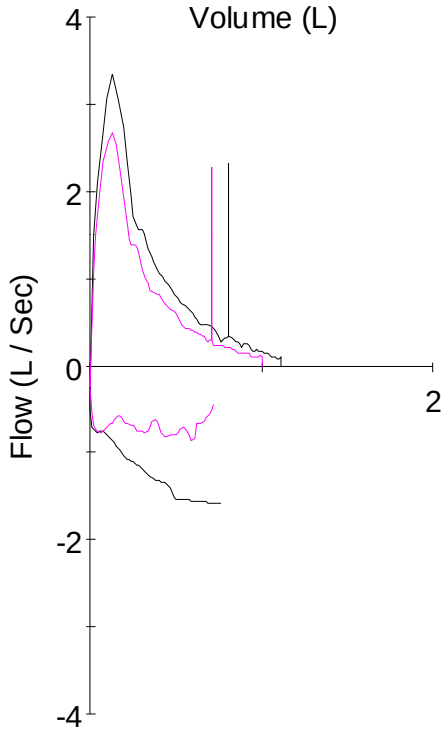
Infecciones

- Adenovirus
- Influenza
- Parainfluenza
- Mycoplasma
- Sarampion
- B. Pertusis

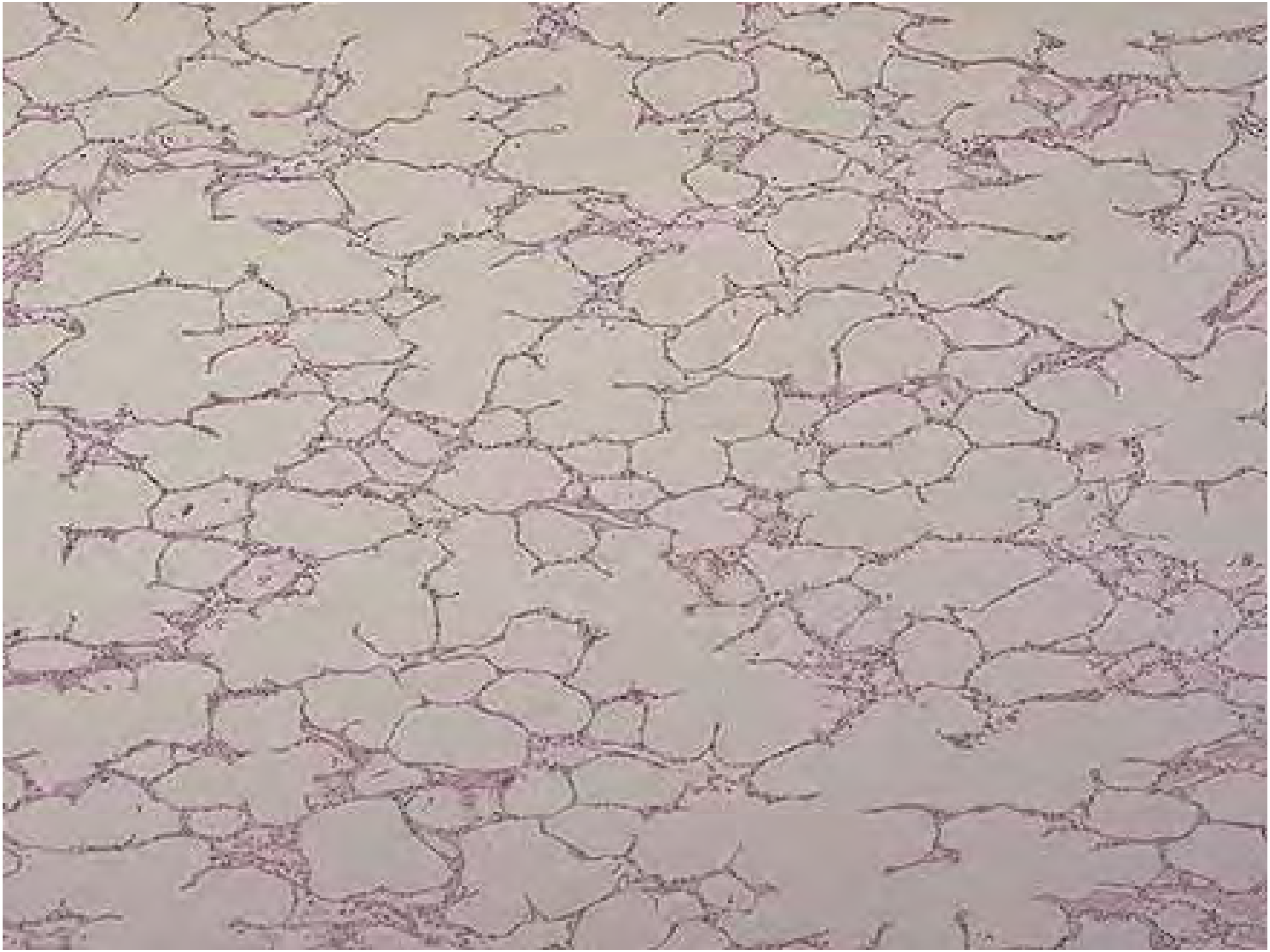
EB

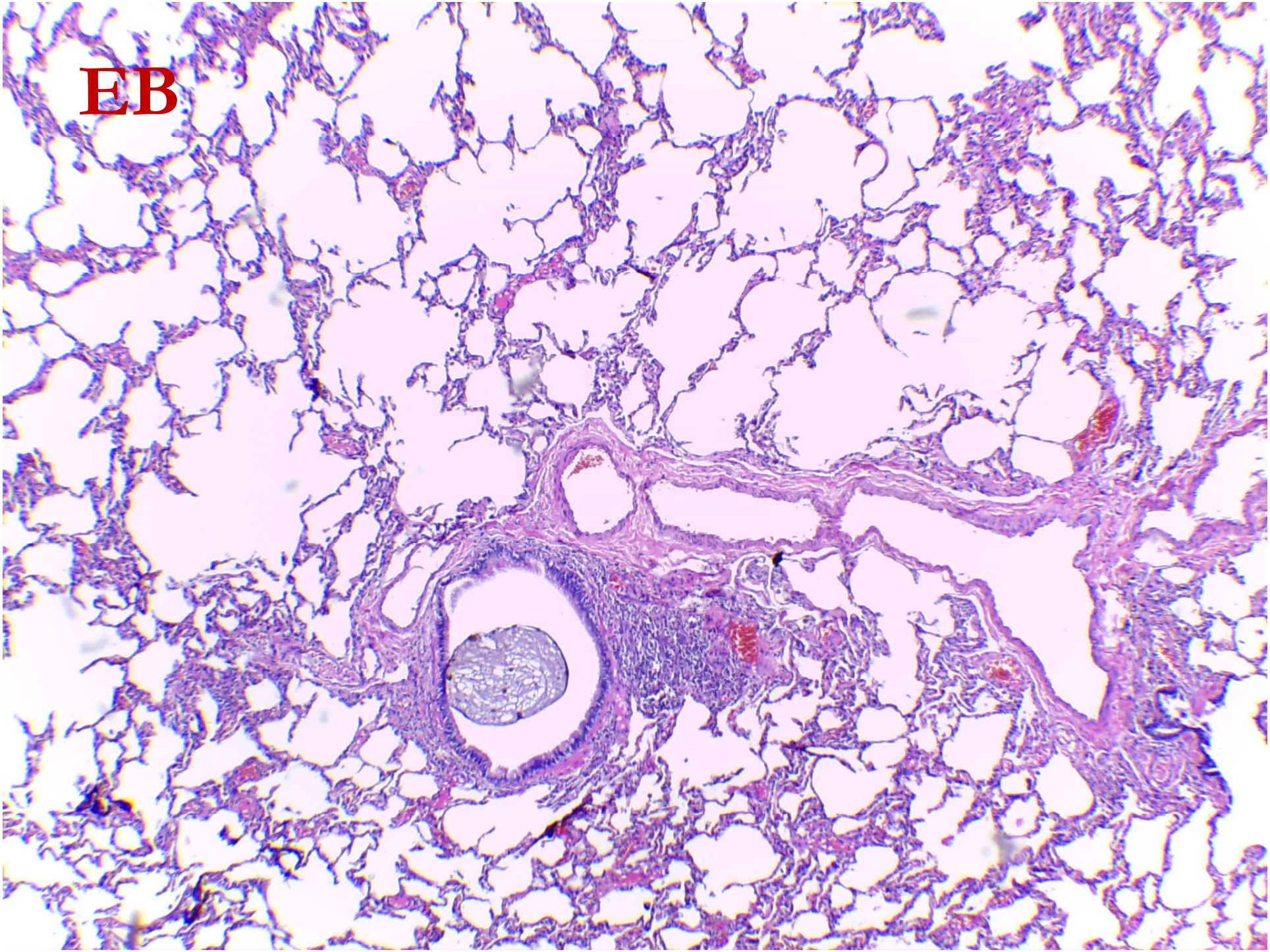
I. **Historia típica**: Internado durante 2 meses al año de vida por bronquiolitis, ARM 18 días y oxígeno suplementario durante 5 años.
II. **No** se identifico **Adenovirus**.
III. **TAC** con patrón en mosaico.

EB



Variable	
CVF	55 %
VEF_1	42 %
VEF_1/CVF	68
FEF_{25-75}	21 %

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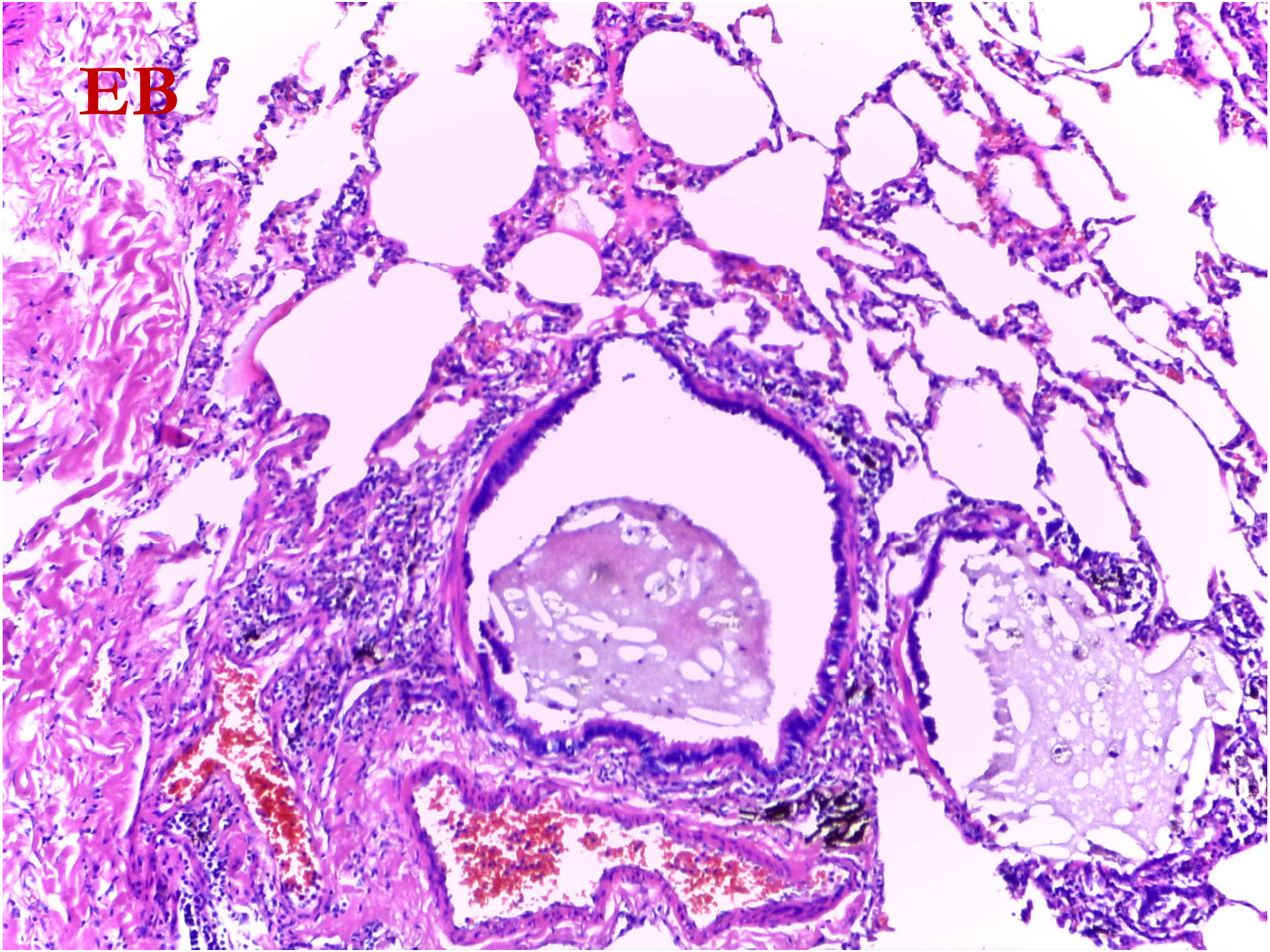
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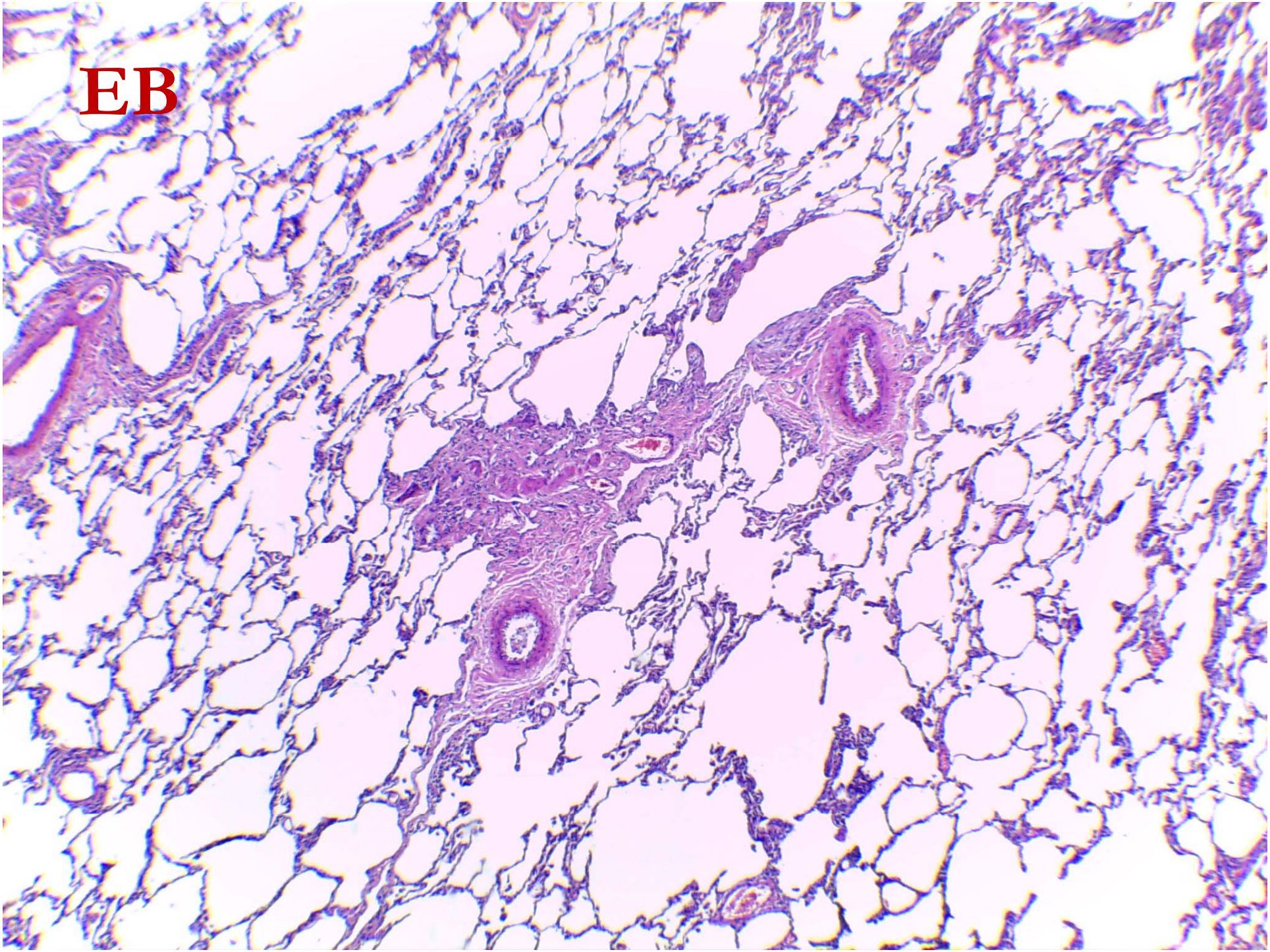
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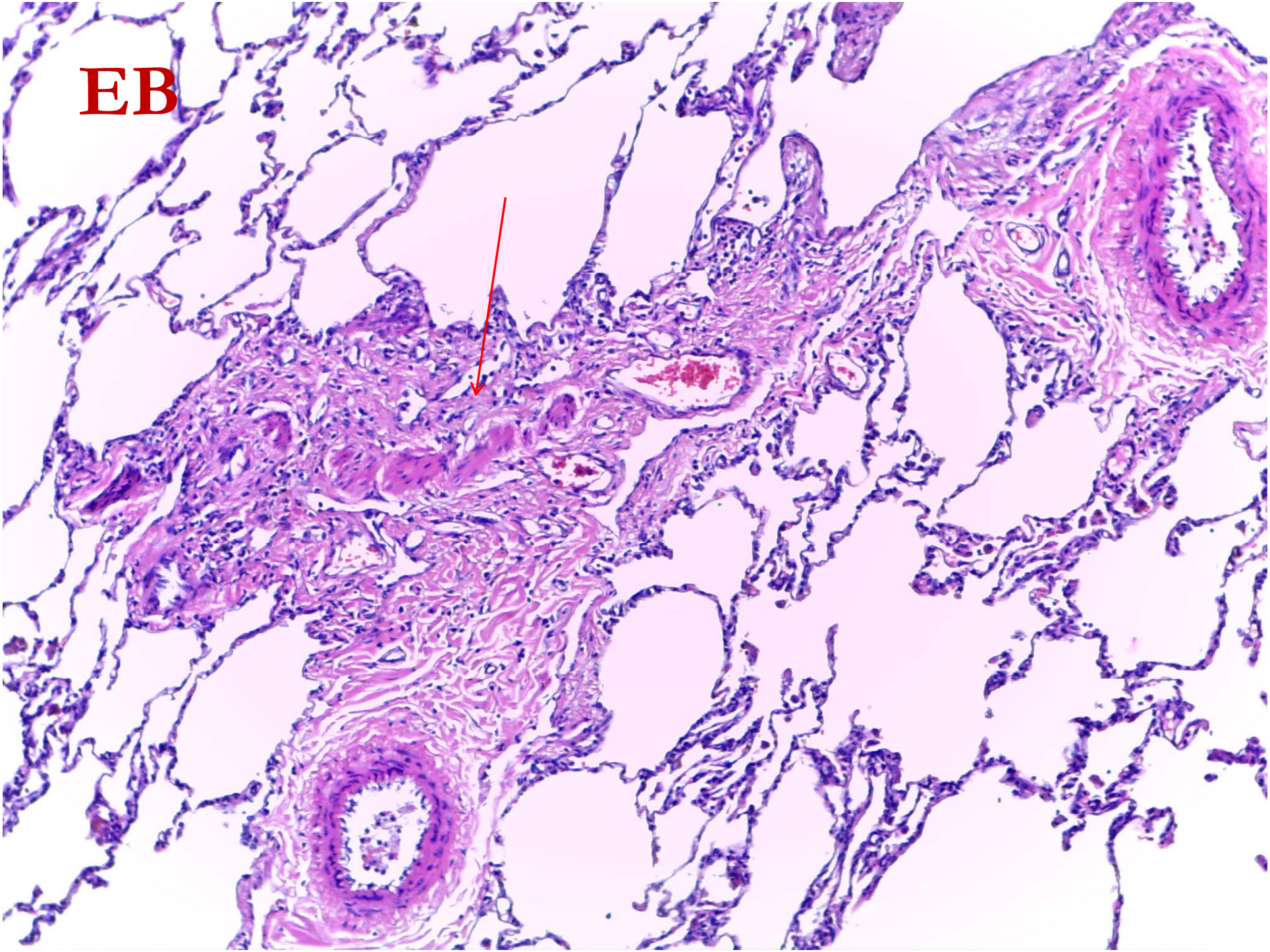
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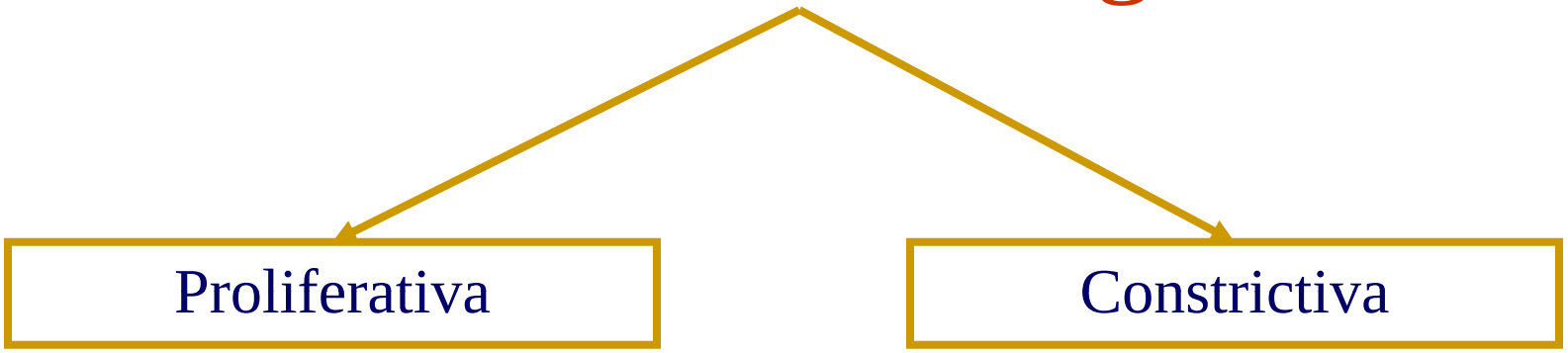
Bronquiolitis Obliterante
Anatomía Patológica

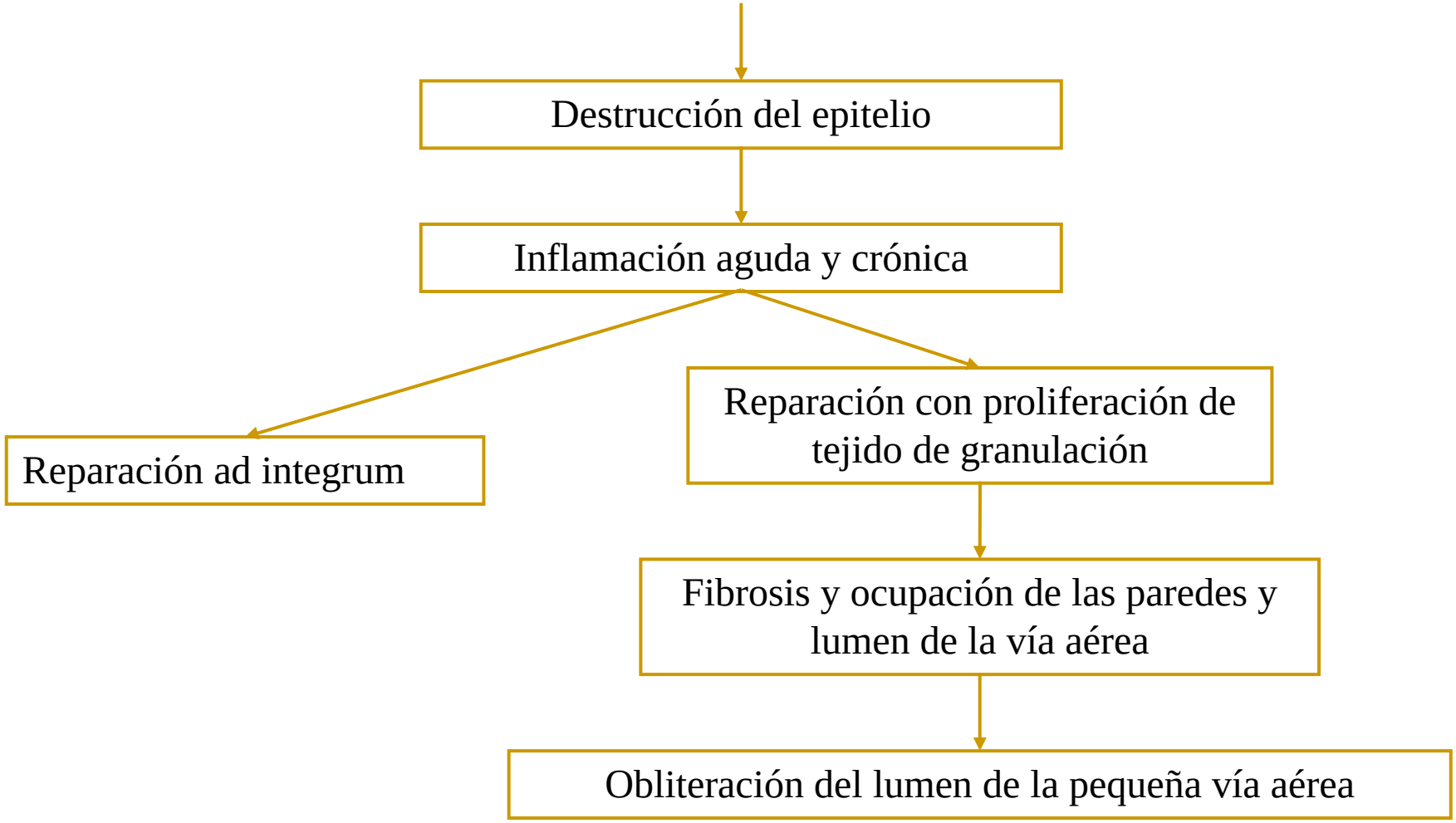


Obstrucción del lumen de la pequeña vía aérea por pólipos constituidos por tejido de granulación.

Fibrosis peribronquiolar con diferentes grados de estrechamiento del lumen

Como se produjo el daño pulmonar…

Patogenia

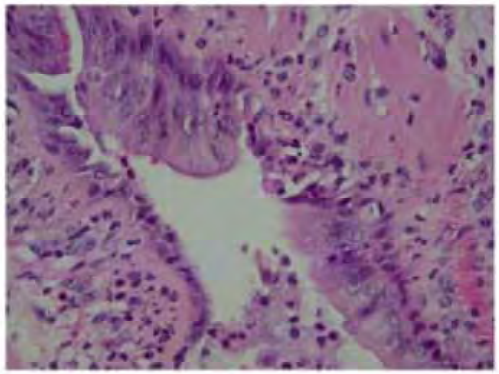
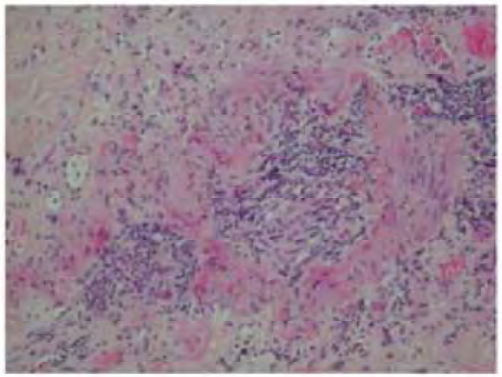
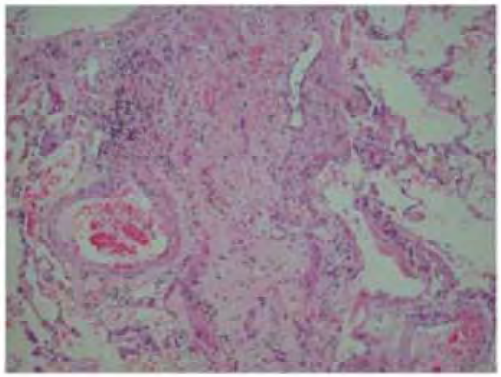


Modificado de King TEJ. Bronchiolitis. In: Fishman AP, editor. Fishman's pulmonary diseases and disorders, 3rd ed. Volume 1. New York: McGraw-Hill; 1998. p 825–847

Mechanisms of Airway Obliteration after Lung Transplantation

Laurent P. Nicod

Clinic and Policlinic of Pneumology, Inselspital, Bern, Switzerland

allo-antigen dependent allo-antigen independent injury	inflammatory/ infiltrative response	fibrosis/ bronchiolitis obliterans
Damage	*Cellular infiltration*	*Matrix deposition* *Vascular remodeling*
		
epithelial cells/ endothelial cells	T cells (CD8/CD4) dendritic cells/ Mo neutrophils/ eosin.	fibroblasts mesenchymal cells endothelial cells

Mediators: **Cytokines: IL-2; TNFa -b; IFNg; IL-12; IL-6**
chemokines: IL-8; Rantes;MCP-1;...
prostaglandines; leukotrienes; endothelin
reactive oxygen metabolites (H2O2;O2-)
metallo-proteinases

Growth factors:

CXCR2-ligands; PDGF; IGF; FGF; TGFb; endothelin

Proc Am Thorac Soc Vol 3. pp 444–449, 2006

Acute Inflammatory Response and Remodeling of Airway Epithelium After Subspecies B1 Human Adenovirus Infection of the Mouse Lower Respiratory Tract

Adriana E. Kajon, Andrew P. Gigliotti, and Kevin S. Harrod*
Lovelace Respiratory Research Institute, Albuquerque, New Mexico

Our findings indicate that Ad3 and Ad7 of subspecies B1, represented in our experiments by the prototype strain GB of serotype 3 (Ad3p) and by the field strain 87–922 corresponding to genome type 7h, do not replicate in the mouse but induce lung disease with a distinct inflammatory infiltrate, lung epithelial injury, and mucous cell metaplasia. Expression of putative immunoregulatory genes encoded in the E3 region of these viruses was detected in infected lungs indicating the feasibility of in vivo studies of the role of early gene products unique to species B adenoviruses in the pathogenesis of respiratory disease. These studies

Journal of Medical Virology 71:233–244 (2003)

Dra Alicia S. Mistchenko y cols.

Participation of immune complexes in adenovirus infection	Demuestra la circulación de ***inmunocomplejos*** conteniendo anfígenos de adenovirus, en pacientes con infección de la vía aérea baja que presentan diferente evolución. Acta Paediatr 81: 983-8. 1992
Cytokines in adenoviral disease in children: Association of interleukin 6, interleukin-8, and tumor necrosis factor alpha levels with clinical outcome	La presencia de ***IL-6, IL-8, y TNF-α*** se asocia en forma significativa con infecciones severas y fatales por adenovirus. J Pediatr 1994;124:714-20.
Lymphocyte subsets and cytokines in adenoviral infection in children	***La relación entre el recuento total de linfocitos, linfocitos T, CD4þ, CD8þ y células NK*** y la severidad se asocio en forma lineal y negativa. Acta Pædiatr 87: 933–9. 1998

Bronchoalveolar Cellularity and Interleukin-8 Levels in Measles Bronchiolitis Obliterans*

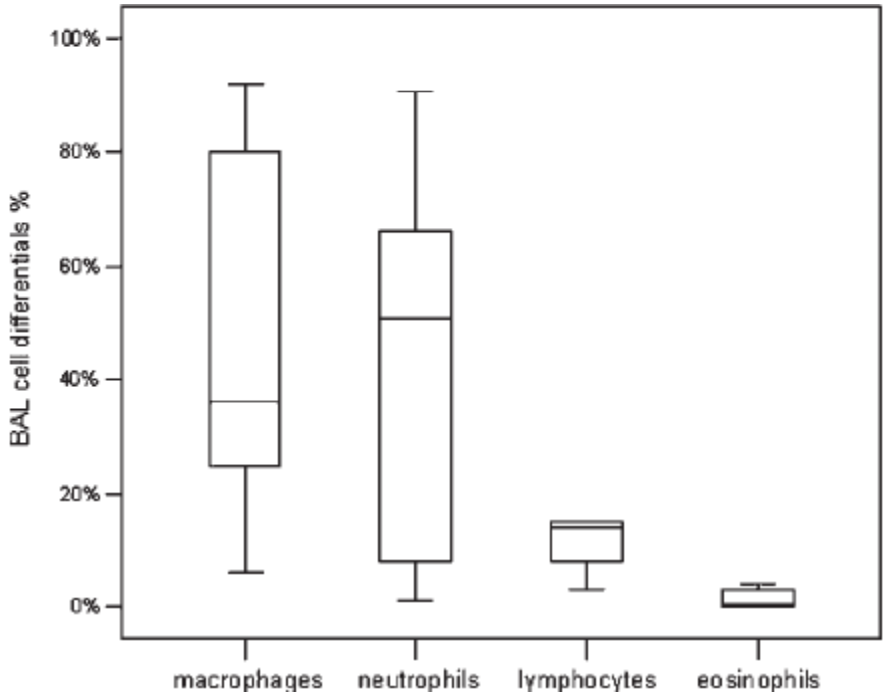
Young Yull Koh, MD; Da Eun Jung, MD; Ji Yeon Koh, MD; Jung Yeon Kim, MD; Young Yoo, MD; and Chang Keun Kim, MD

Characteristics	Measles BO (n = 12)	Control (n = 10)
Total cells, 10^4/mL	38.5† (18.2–159.0)	15.6 (7.9–18.1)
Macrophages, %	71.0† (40.8–84.3)	85.0 (81.5–89.0)
Lymphocytes, %	4.0 (1.0–10.0)	7.5 (5.0–10.8)
Neutrophils, %	16.0‡ (4.3–56.5)	2.3 (1.0–3.9)
Eosinophils, %	0.0 (0.0–0.8)	0.0 (0.0–0.1)
Epithelial cells	3.5 (2.3–4.2)	3.2 (1.7–9.9)
Lymphocyte subsets		
CD3+, %	88.0 (84.0–91.8)	82.0 (78.0–88.5)
CD4+, %	23.3 (23.0–34.0)	28.0 (28.0–34.0)
CD8+, %	62.0‡ (55.0–65.0)	46.0 (38.8–50.5)
CD4/CD8 ratio	0.41‡ (0.36–0.55)	0.65 (0.57–0.79)

CHEST 2007; 131:1454–1460

Airway Inflammation and Lung Function Decline in Childhood Post-Infectious Bronchiolitis Obliterans

Salvatore Cazzato, MD, PhD,[1]* Venerino Poletti, MD,[2] Filippo Bernardi, MD,[1] Leonardo Loroni, MD,[3] Luca Bertelli, MD,[1] Stefano Colonna, MD,[1] Franco Zappulla, MD,[1] Giuseppe Timoncini, MD,[4] and Alessandro Cicognani, MD[1]



Pediatric Pulmonology 43:381–390 (2008)

Airway Inflammation and Lung Function Decline in Childhood Post-Infectious Bronchiolitis Obliterans

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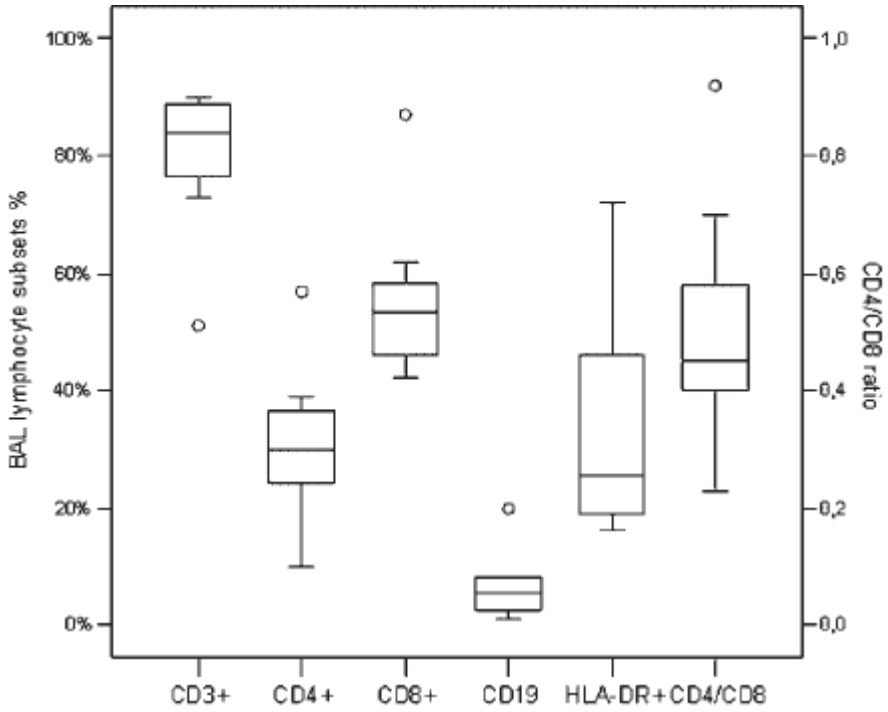


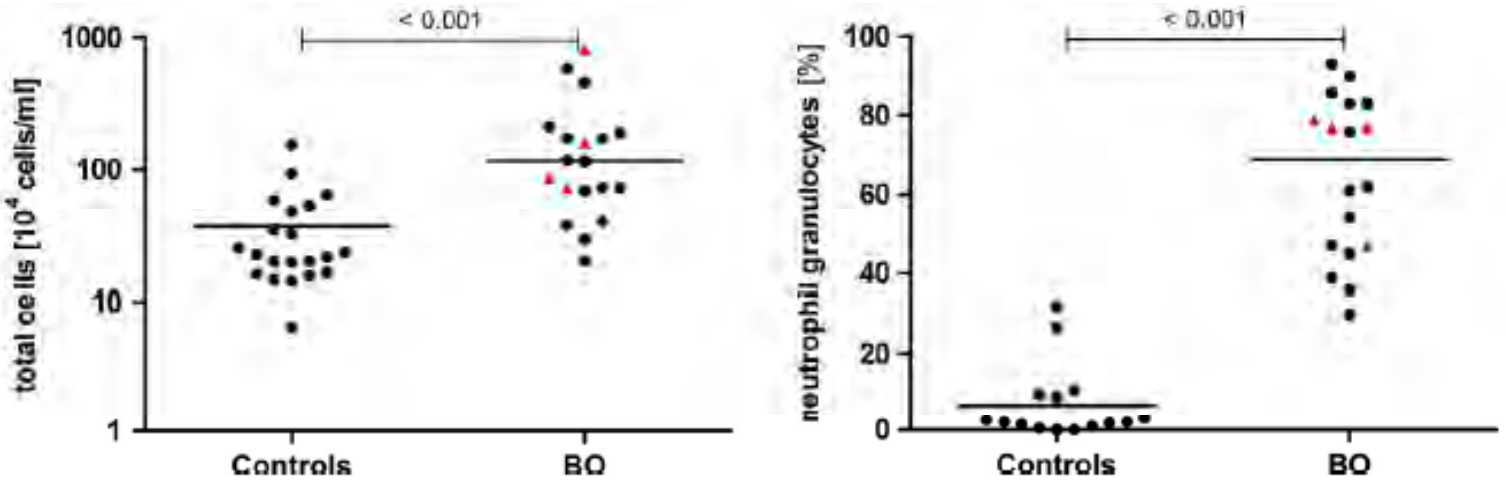
Pediatric Pulmonology 43:381–390 (2008)

Airway inflammation in children and adolescents with bronchiolitis obliterans

rk

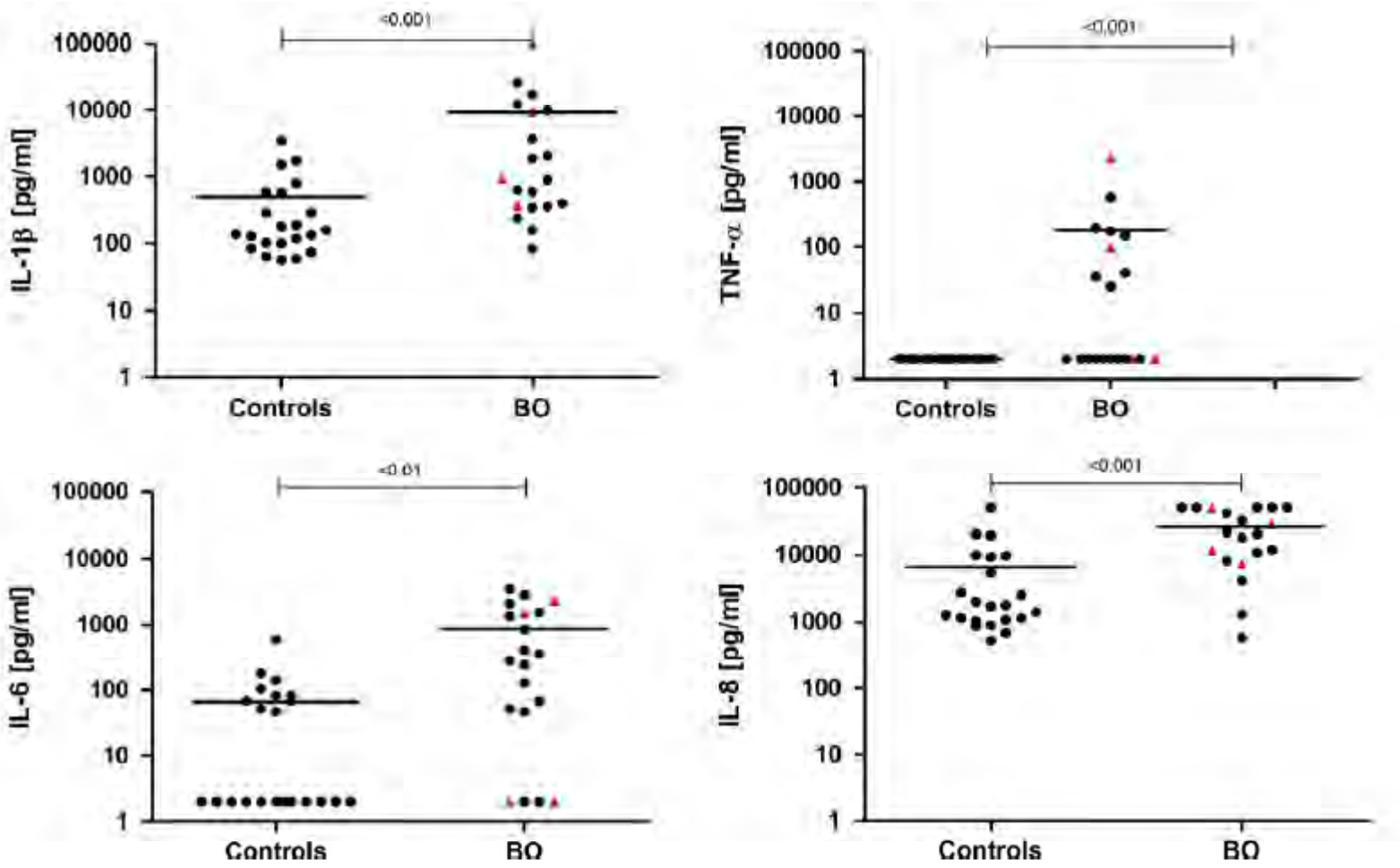
Martin Rosewich [a,*], Ulrich M. Zissler [b], Tanja Kheiri [a], Sandra Voss [a], Olaf Eickmeier [a], Johannes Schulze [a], Eva Herrmann [c], Ruth Pia Dücker [a], Ralf Schubert [a], Stefan Zielen [a]

[a] Department of Paediatric Pulmonology, Allergy and Cystic Fibrosis, Children's Hospital, Goethe-University, Theodor-Stern-Kai 7, 60590 Frankfurt, Germany
[b] Center of Allergy and Environment (ZAUM), Technical University and Helmholtz Center Munich, Germany
[c] Institute of Biostatistics and Mathematical Modelling, Goethe-University, Theodor-Stern-Kai 7, 60590 Frankfurt, Germany



Cytokine. 2015 May;73(1):156-62

Airway inflammation in children and adolescents with bronchiolitis obliterans



Cytokine. 2015 May;73(1):156-62

Risk factors for the development of bronchiolitis obliterans in children with bronchiolitis

Table 2 Multivariate logistic regression analysis of risk factors for BO

Variable	OR	95% CI	p value
Age (<6 v ≥6 months)	1.4	0.4 to 5.4	0.6
Sex (male v female)	0.8	0.2 to 2.6	0.7
ETS at present	1.4	0.4 to 4.5	0.5
ETS during pregnancy	0.4	0.1 to 3.2	0.4
Adenovirus infection	49	12 to 199	<0.001
Mechanical ventilation	11	2.6 to 45	0.001

ETS, environmental tobacco smoke.

Colom et al. *Thorax* 2006;61:503-506

Como podríamos evitar el daño pulmonar…

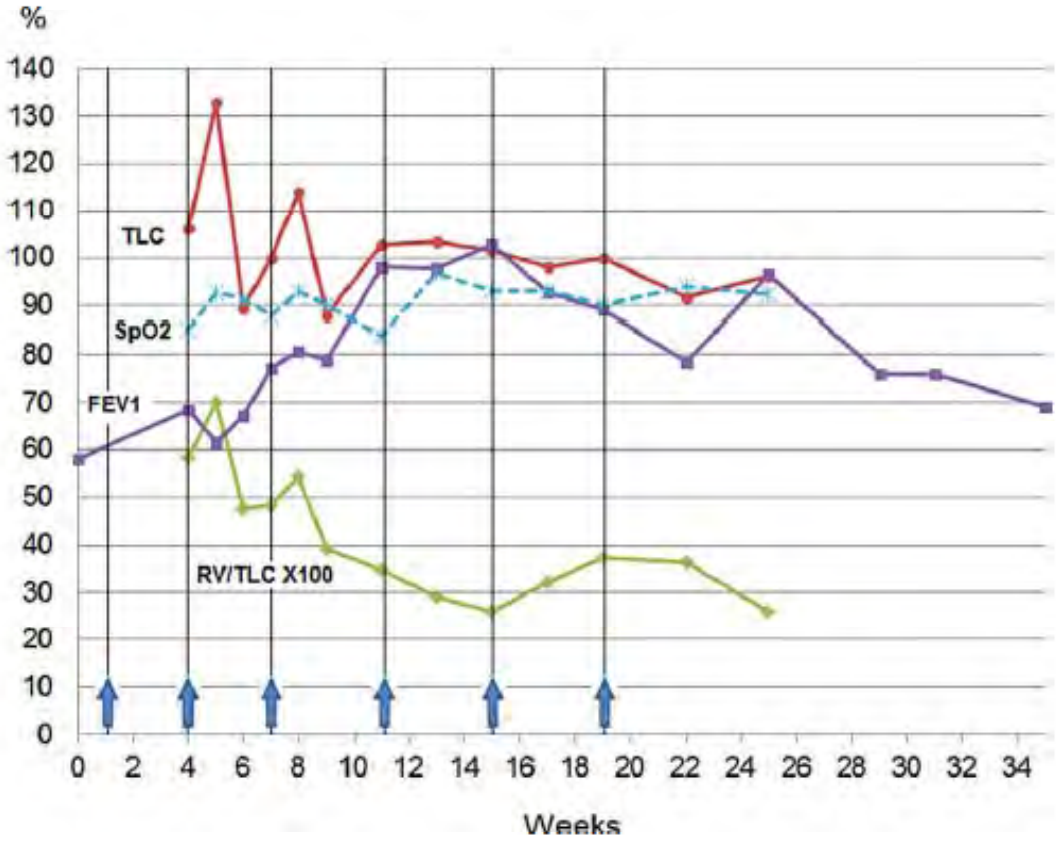
¿ Que utilizar y cuando ?

POSIBLES TRATAMIENTOS

1. Corticoides

Efficacy of Pulse Methylprednisolone in a Pediatric Case of Postinfectious Bronchiolitis Obliterans

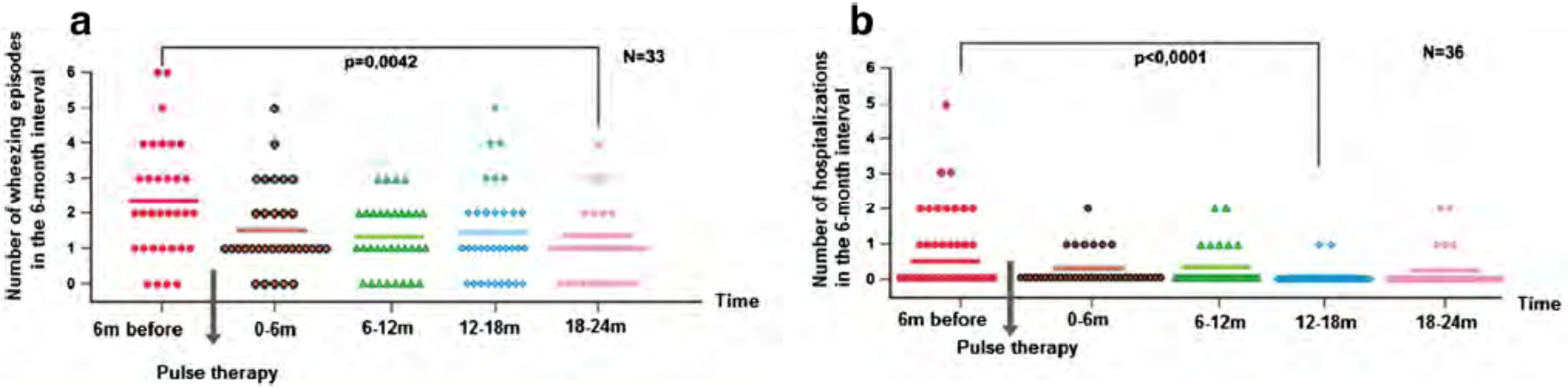
Kalliopi Tanou, MD, Athina Xaidara, MD, and Athanasios G. Kaditis, MD*



Pediatr Pulmonol. 2015 May;50(5):E13-6.

Follow-up on pediatric patients with bronchiolitis obliterans treated with corticosteroid pulse therapy

Silvia Onoda Tomikawa[1,3*], Fabíola Villac Adde[1], Luiz Vicente Ribeiro Ferreira da Silva Filho[1], Claudio Leone[2] and Joaquim Carlos Rodrigues[1]



Follow-up on pediatric patients with bronchiolitis obliterans treated with corticosteroid pulse therapy

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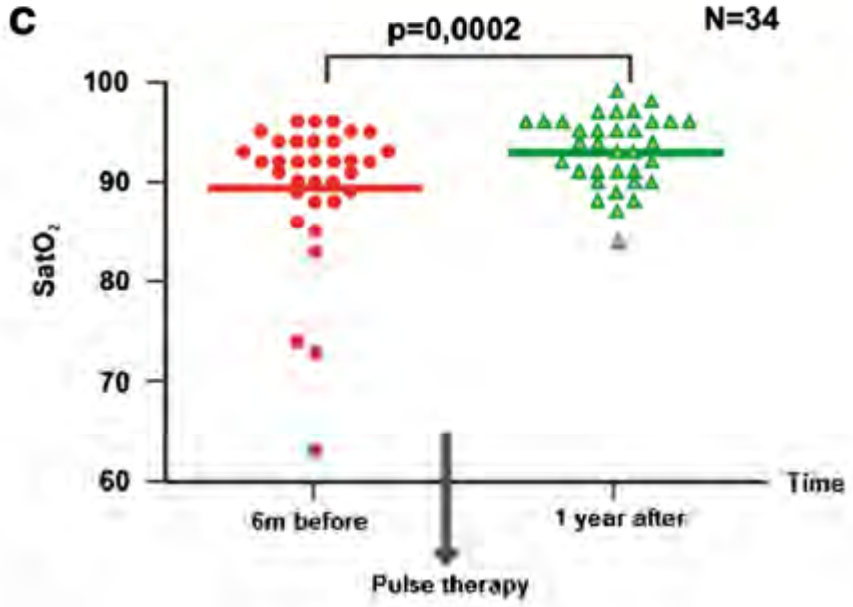


Tratamiento con Metilprednisolona

		Pre TTO			Pos TTO	
	Evolución	Sao_2	FR	Pulsos	Sao_2	FR
1	3	90 %	45	6	90 %	40
2	1	93 %	40	6	94 %	36
3	4	90 %	40	4	90 %	32
4	1	89 %	36	2	90%	40
5	1	90 %	60	1	90%	60
6	5	90%	50	1	91%	50

POSIBLES TRATAMIENTOS

1. Corticoides

POSIBLES TRATAMIENTOS

1. Corticoides
2. Macrólidos

Macrólidos
Efectos antinflamatorios
in vitro

a. Liberación de citocinas y quimiocinas

Supresión de IL-1B y TNF en monocitos
IL-1B, IL-6, TNFa y GM-CSF en células cebadas
IL-8, ENA-78 y MIP-1 en macrófagos y leucocitos.
Inhibición de eotaxina, GM-CSF

Expresión de moléculas de adhesión

< e-selectina
< ICAM1 y SICAM-1
Dism. □-2 integrinas (CD11b*/CD18)
Disminución de VCAM 1
Disminución de función de linfocitos asociada a LAF3.

PMN

Inhibición de elastasa de neutrófilos
Inhibición de aniones superóxido
Est. desgranulación de PMN
Incremento de AMPc en PMN acelerando su apoptosis
Promueven fagocitosis de PMN por los macrófagos

Células T

Inhibición de IL-4 e IL-5 dosis dependiente

Clinical features of post-infectious bronchiolitis obliterans in children undergoing long-term azithromycin treatment

XUEYAN WANG[1], CHANGSHAN LIU[1], MENGJUAN WANG[1], YI ZHANG[1], HEWEN LI[2] and GELI LIU[3]

Departments of [1]Pediatrics and [2]Radiology, The Second Hospital of Tianjin Medical University, Heping, Tianjin 300211; [3]Department of Pediatrics, The General Hospital of Tianjin Medical University, Heping, Tianjin 300052, P.R. China

Patient	Age (month)	Gender	Predisposing factors	Diagnostic method	Treatment		Hospital stay (days)	Disease course (months)	Outcomes
					Steroid	Azithromycin			
1	24	M	*Mycoplasma pneumoniae*	HRCT	+	+	39	20	Exacerbation
2	12	M	*Mycoplasma pneumoniae*	HRCT	+	+	33	17	No improvement
3	7	M	Adenovirus	HRCT	+	+	54	13	Improved
4	7	M	Adenovirus	HRCT	+	+	57	13	Improved
5	3	M	Adenovirus	HRCT	+	+	22	13	Improved
6	5	M	Unknown	HRCT	+	+	26	14	Improved
7	36	M	*Mycoplasma pneumoniae*	HRCT	+	+	23	10	No improvement
8	24	M	Epstein-Barr virus	HRCT	+	+	19	7	Improved
9	51	F	*Mycoplasma pneumoniae*	HRCT	+	+	16	26	Improved
10	30	F	*Mycoplasma pneumoniae*	HRCT	+	+	15	12	Improved
11	10	M	Adenovirus	HRCT	+	+	28	18	No improvement
12	72	F	*Mycoplasma pneumoniae*	HRCT	+	+	20	22	Improved
13	8	M	Unknown	HRCT	+	+	21	12	Improved
14	16	M	Adenovirus	HRCT	+	+	23	18	No improvement
15	5	M	Adenovirus	HRCT	+	+	30	31	Exacerbation
16	13	M	Unknown	HRCT	+	+	26	19	Improved

M, male; F, female; HRCT, high-resolution computed tomography.

Efecto de la Azitromicina en la función pulmonar y exacerbaciones en pacientes con bronquiolitis obliterante postinfeccioisa

Castaños, C; Salim, M; Pereyra, C; Aguerre, V; Lucero, B; Bauer, G; Zylbersztajn, B; Lelivedl L; Gonzalez Pena,H.

Servicio de Neumonología Hospital de Pediatría "Juan P. Garrahan". Buenos Aires, Argentina.

		Azithromycin	P Value*	Placebo	P Value*
		n 12		n 9	
Relative Change %	>	9	0,004	6	0,08
CVF	<	0		2	
1m – 6m	=	3		1	
Relative Change %	>	7	0,20	3	0,85
VEF1	<	4		3	
1m – 6m	=	1		3	
		n 12		n 6	
Relative Change %	>	9	0,07	3	0,40
CPT	<	2		3	
1m - 6m	=	1			
Relative Change %	>	6	0,93	5	0,07
VR	<	6		1	
1m - 6m	=				

POSIBLES TRATAMIENTOS

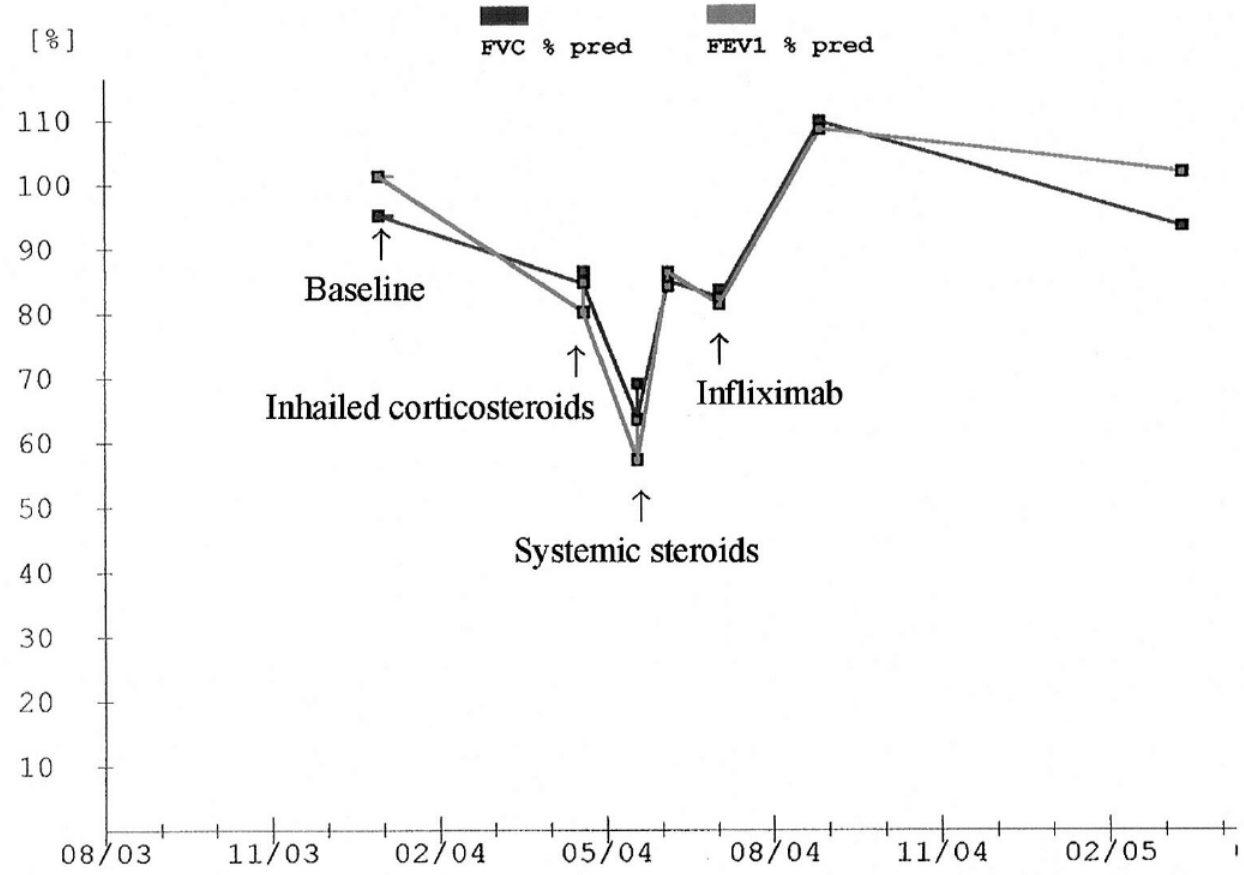
1. Corticoides
2. Macrólidos

POSIBLES TRATAMIENTOS

1. Corticoides
2. Macrólidos
3. Anti - FNT-α

Successful Treatment of Bronchiolitis Obliterans in a Bone Marrow Transplant Patient With Tumor Necrosis Factor-α Blockade

Jason J. Fullmer, MD*; Leland L. Fan, MD*; Megan K. Dishop, MD‡; Cheryl Rodgers, RNP§; and Robert Krance, MD§



POSIBLES TRATAMIENTOS

1. Corticoides
2. Macrólidos
3. Anti - FNT-α

POSIBLES TRATAMIENTOS

1. Corticoides
2. Macrólidos
3. Anti - FNT-α
4. Otras medicaciones…

Cuando medicar ???

Post-infectious bronchiolitis obliterans in children: CT features that predict responsiveness to pulse methylprednisolone

[1]H M YOON, MD, [1]J S LEE, MD, [2]J-Y HWANG, MD, [1]Y A CHO, MD, [1]H-K YOON, MD, [3]J YU, MD, [3]S-J HONG, MD and [1]C H YOON, MD

Objective: Intravenous pulse methylprednisolone therapy (IPMT) is an important treatment option for post-infectious obliterative bronchiolitis (OB), although it must be used carefully and only in selected patients because of its drawbacks. This study evaluated whether CT and clinical features of children with post-infectious OB can predict their responsiveness to IPMT.

Methods: We searched the medical records for patients (less than 18 years of age) who were diagnosed with post-infectious OB between January 2000 and December 2011. 17 children who received IPMT were included in this study. All underwent chest CT before and after IPMT. The radiological features seen on pre-treatment CT were recorded. The air-trapping area percentages on pre- and post-treatment CT images were determined. The nine patients who exhibited decreased air trapping on post-treatment CT scans relative to pre-treatment scans were classed as responders. The patient ages and time from initial pneumonia to IPMT were recorded.

Results: All responders and only four non-responders had thickened bronchial walls before treatment ($p = 0.029$). The two groups did not differ significantly in terms of bronchiolitis, bronchiectasis or the extent of air trapping, although the responders had a significantly shorter median interval between initial pneumonia and IPMT (4 *vs* 50 months; $p = 0.005$) and were significantly younger (median, 2.0 *vs* 7.5 years; $p = 0.048$).

Conclusion: Immediate IPMT may improve the degree of air trapping in children with post-infectious OB if they show a thickened bronchial wall on CT.

Advances in knowledge: Children with post-infectious OB may respond favourably to IPMT when pre-treatment CT indicates bronchial-wall thickening.

Br J Radiol 2015;88:20140478.

Post-infectious bronchiolitis obliterans in children: CT features that predict responsiveness to pulse methylprednisolone

[1]H M YOON, MD, [1]J S LEE, MD, [2]J-Y HWANG, MD, [1]Y A CHO, MD, [1]H-K YOON, MD, [3]J YU, MD, [3]S-J HONG, MD and [1]C H YOON, MD

Table 1. Clinical and radiological features of 17 patients with post-infectious obliterative bronchiolitis

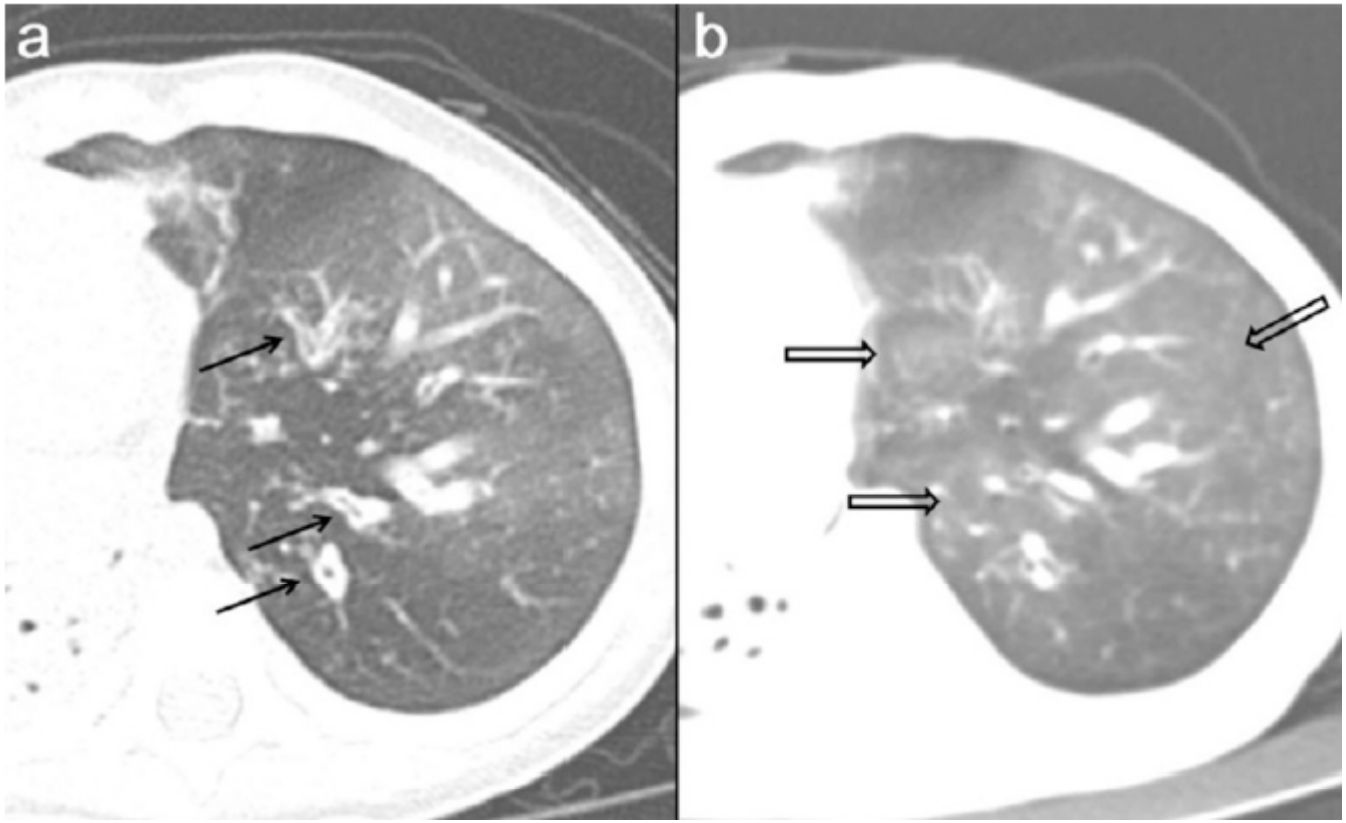
Clinical and radiological features	Responder	Non-responder	*p*-value
Bronchial wall thickening	9 (100%)	4 (50%)	<0.05
Inflammatory bronchiolitis	6 (66.7%)	2 (25%)	>0.05
Bronchiectasis	6 (66.7%)	3 (37.5%)	>0.05
Mean CT attenuation value (HU)	−868.8 (43.6)	−888.4 (42.0)	>0.05
Interval between the initial pneumonia episode and the start of IPMT (months)	4 (2–7)	50 (31.3–74.8)	<0.05
Interval between post-infectious obliterative bronchiolitis diagnosis and the start of IPMT (months)	1 (1–2)	5.5 (1–14.5)	>0.05
Median patient age at the start of IPMT (years)	2 (1–5)	7.5 (4.5–9.3)	<0.05

IPMT, intravenous methylprednisolone therapy.
The data are expressed as number (%), mean (standard deviation) or months/year (quartiles).

Br J Radiol 2015;88:20140478.

Post-infectious bronchiolitis obliterans in children: CT features that predict responsiveness to pulse methylprednisolone

[1]H M YOON, MD, [1]J S LEE, MD, [2]J-Y HWANG, MD, [1]Y A CHO, MD, [1]H-K YOON, MD, [3]J YU, MD, [3]S-J HONG, MD and [1]C H YOON, MD



Br J Radiol 2015;88:20140478.

BO por inhalación de gases tóxicos

(SO2, NH3, NO2, phosgene)

Exposición a gases tóxicos

Leve	**Sin síntomas**		
Moderado	**Bronquitis** **Horas - días**	**Recuperación** **Días - horas**	
severo	**Edema pulmonar (SDRA)** **3 – 30 horas**	**Recuperación** **Días - semanas**	

BO por inhalación de gases tóxicos

(SO2, NH3, NO2, phosgene)

Exposición a gases tóxicos

Leve	**Sin síntomas**		**BO** **2 – 8 semanas**
Moderado	**Bronquitis** **Horas - días**	**Recuperación** **Días - horas**	**BO** **2 – 8 semanas**
severo	**Edema pulmonar (SDRA)** **3 – 30 horas**	**Recuperación** **Días - semanas**	**BO** **2 – 8 semanas**

Que podemos esperar a largo plazo…

Casos nuevos de BO desde 1986

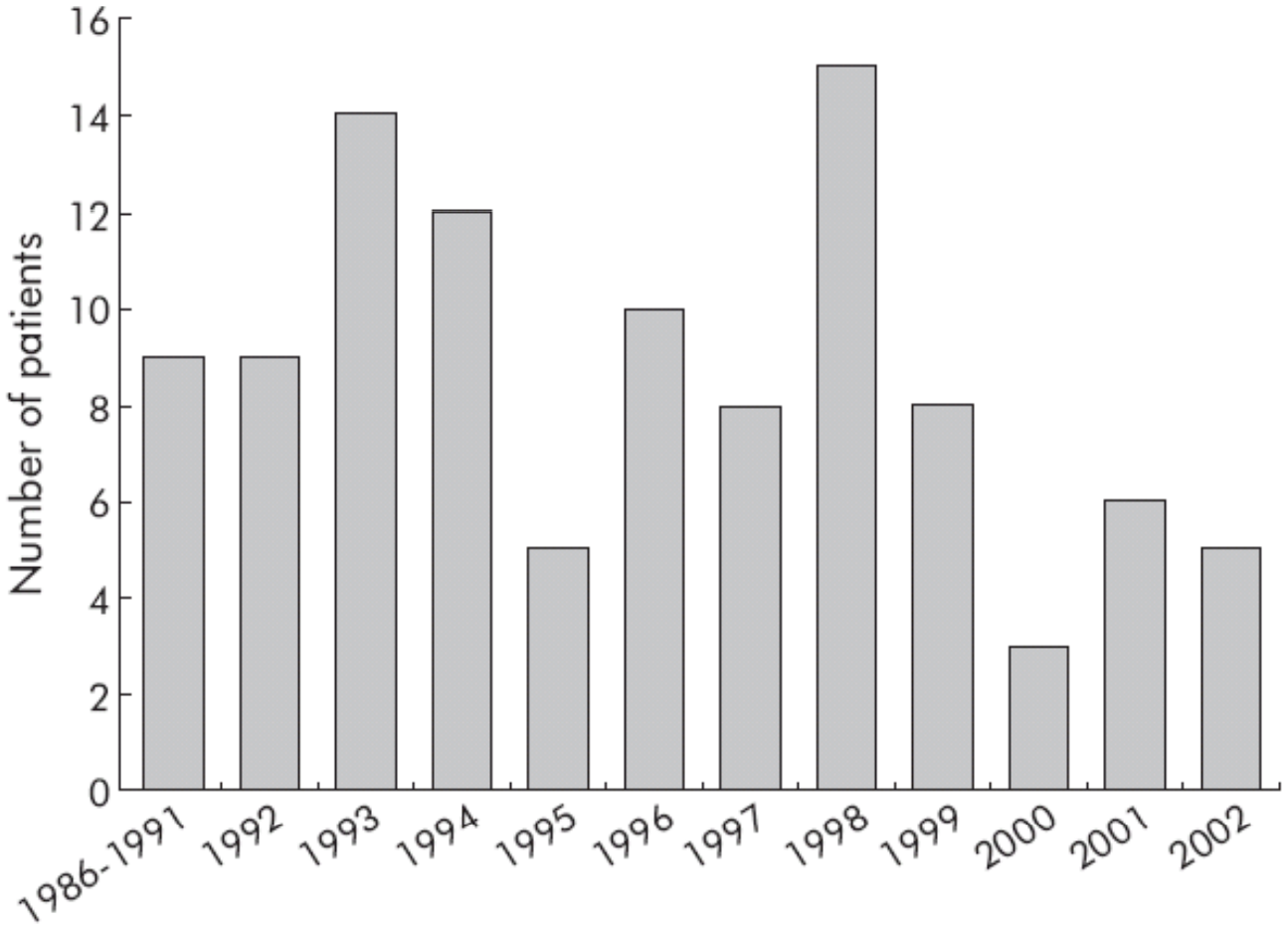


Figure 1 Cases of post-infectious BO by calendar year.

Colom et al. *Thorax* 2006;61:503-506

Pulmonary function of a paediatric cohort of patients with postinfectious bronchiolitis obliterans. A long term follow-up

Alejandro J Colom,[1] Alberto Maffey,[1] Facundo Garcia Bournissen,[2] Alejandro Teper[1]

Objetivo

Determinar la evolución de la función pulmonar de niños con BO posinfecciosa.

Colom AJ, et al. Thorax 2015;70:169–174.

Población

n	46
Edad al ingreso	9±3
Sexo masculino	54%
Años de seguimiento	12.5±3.5
Espirometrías	197
Pletismografías	41

Colom AJ, et al. Thorax 2015;70:169–174.

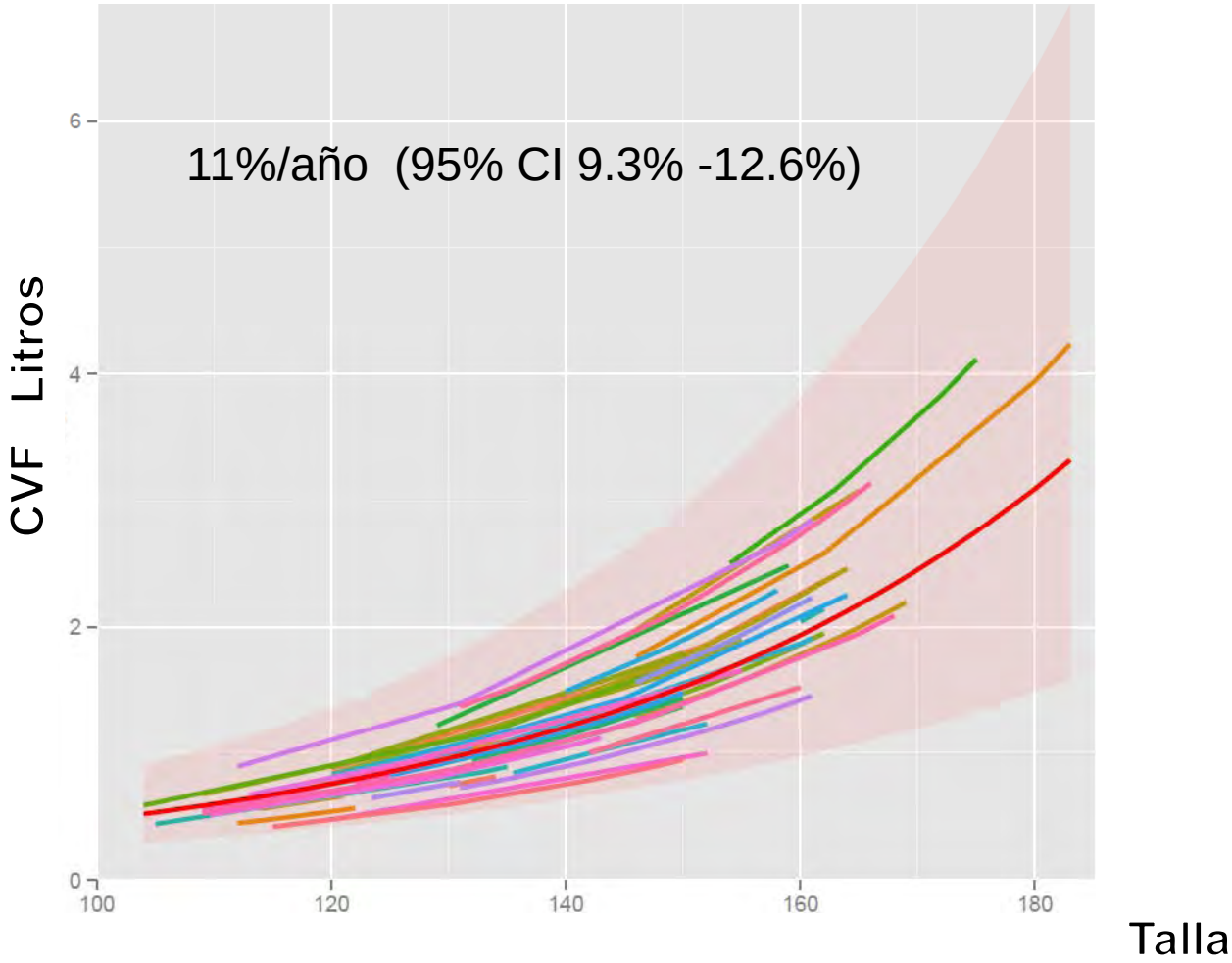
Resultados

Z-score BMI	-0.5 ± 1.3
FVC (%)	55±16
FEV1 (%)	42±13
FEV1/FVC	68±12
FEF25-75 (%)	25±14
TLC (%)	120±26
RV (%)	309±108
RV/TLC	55±13

Colom AJ, et al. Thorax 2015;70:169–174.

Resultados

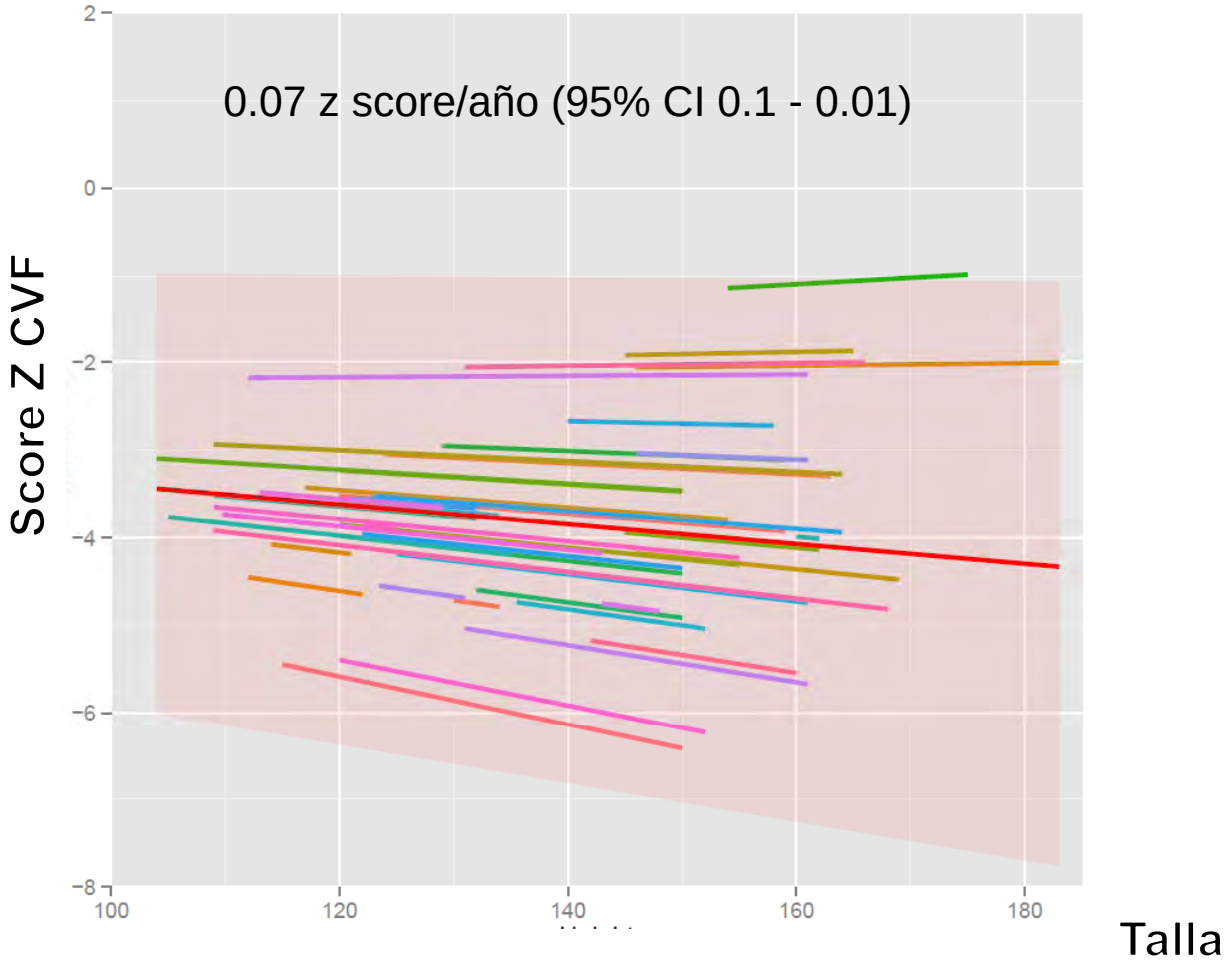
CVF Vs Talla



Colom AJ, et al. Thorax 2015;70:169–174.

Resultados

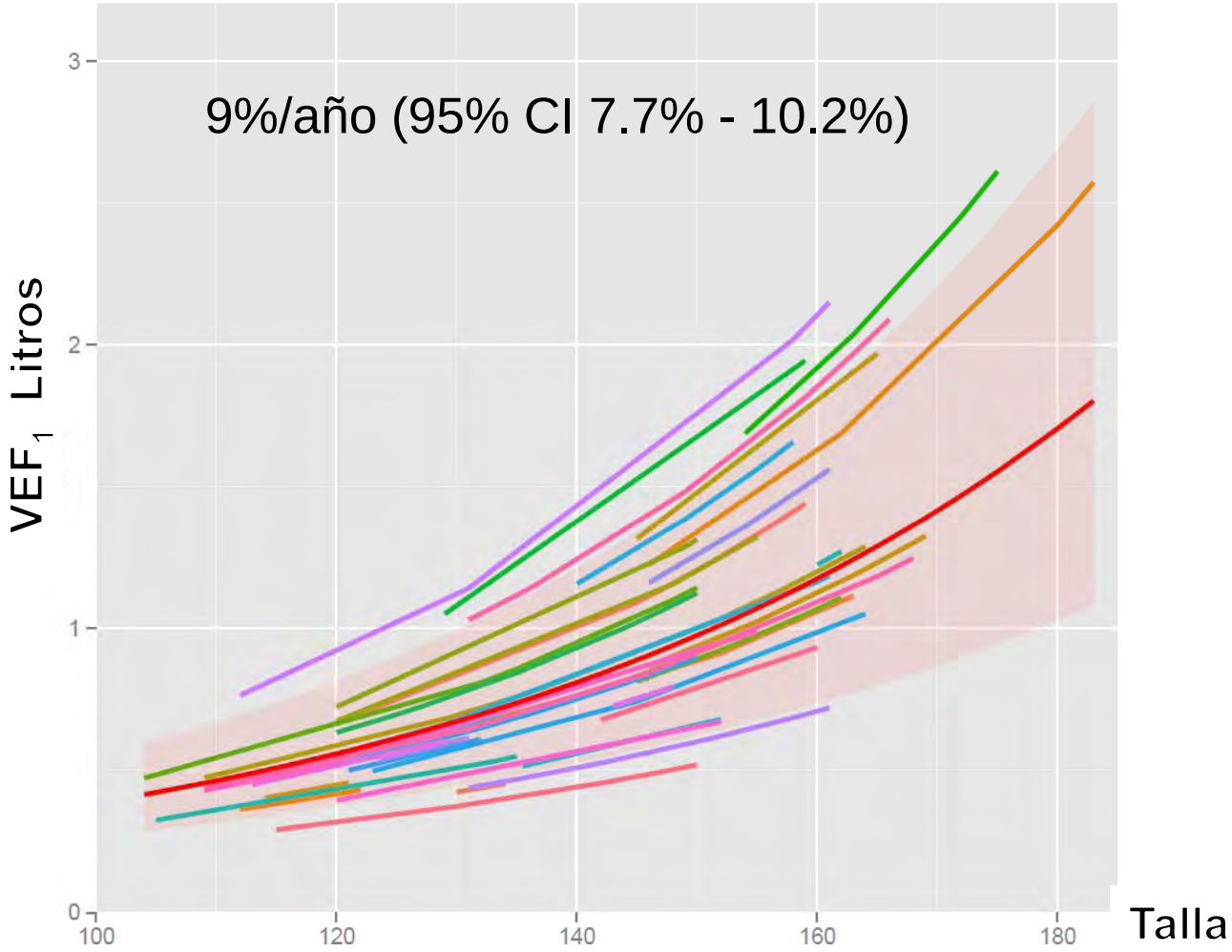
Score Z CVF Vs Talla



Colom AJ, et al. Thorax 2015;70:169–174.

Resultados

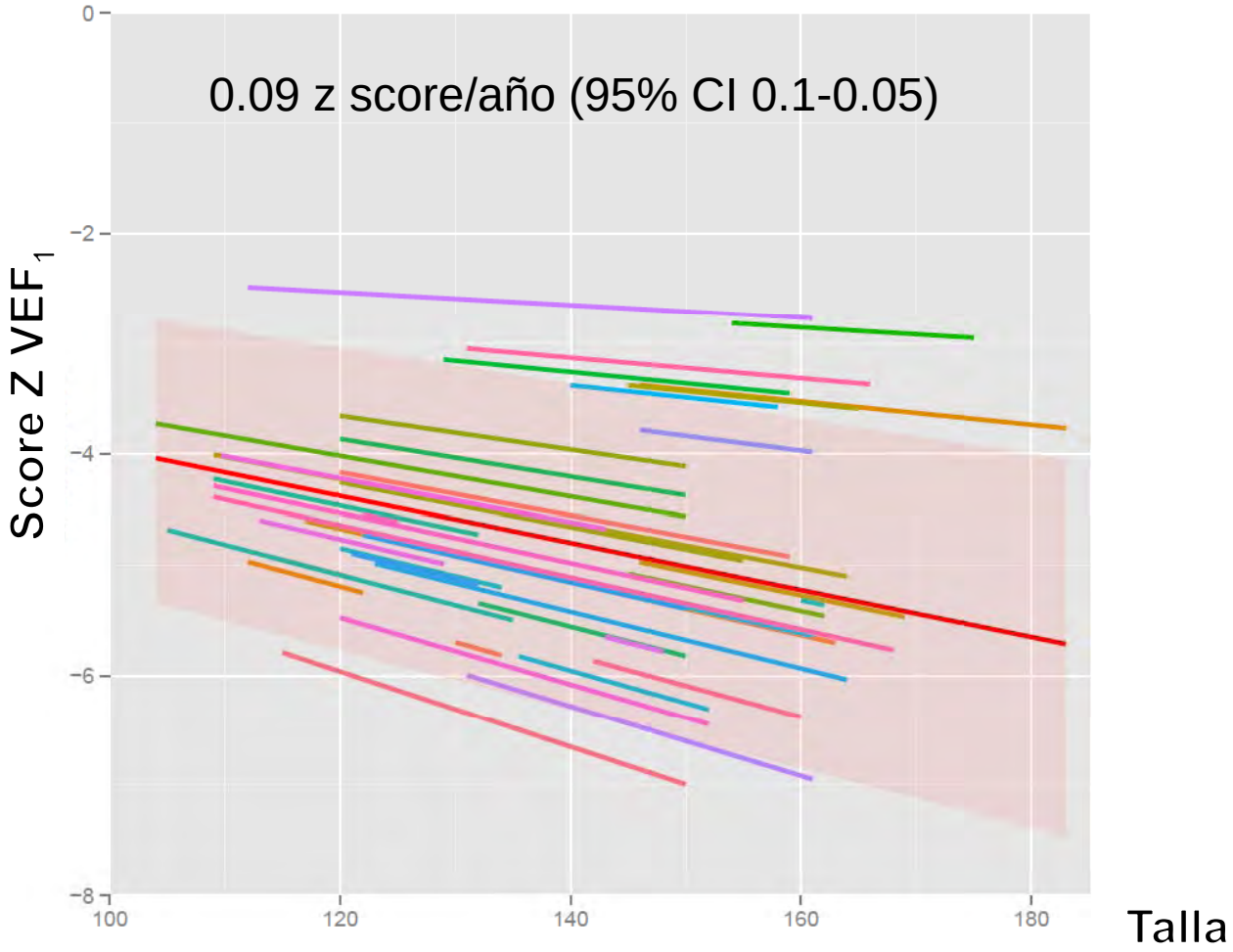
VEF_1 Vs Talla



Colom AJ, et al. Thorax 2015;70:169–174.

Resultados

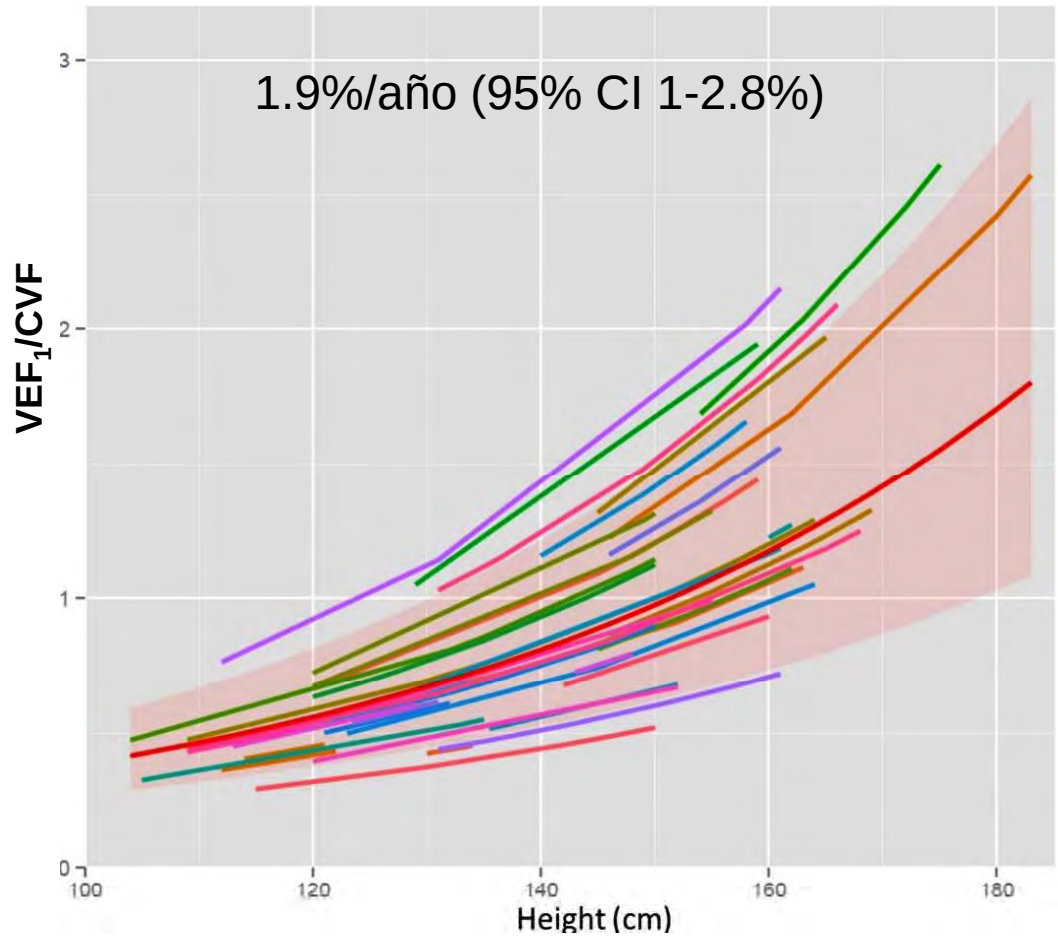
Score Z VEF_1 Vs Talla



Colom AJ, et al. Thorax 2015;70:169–174.

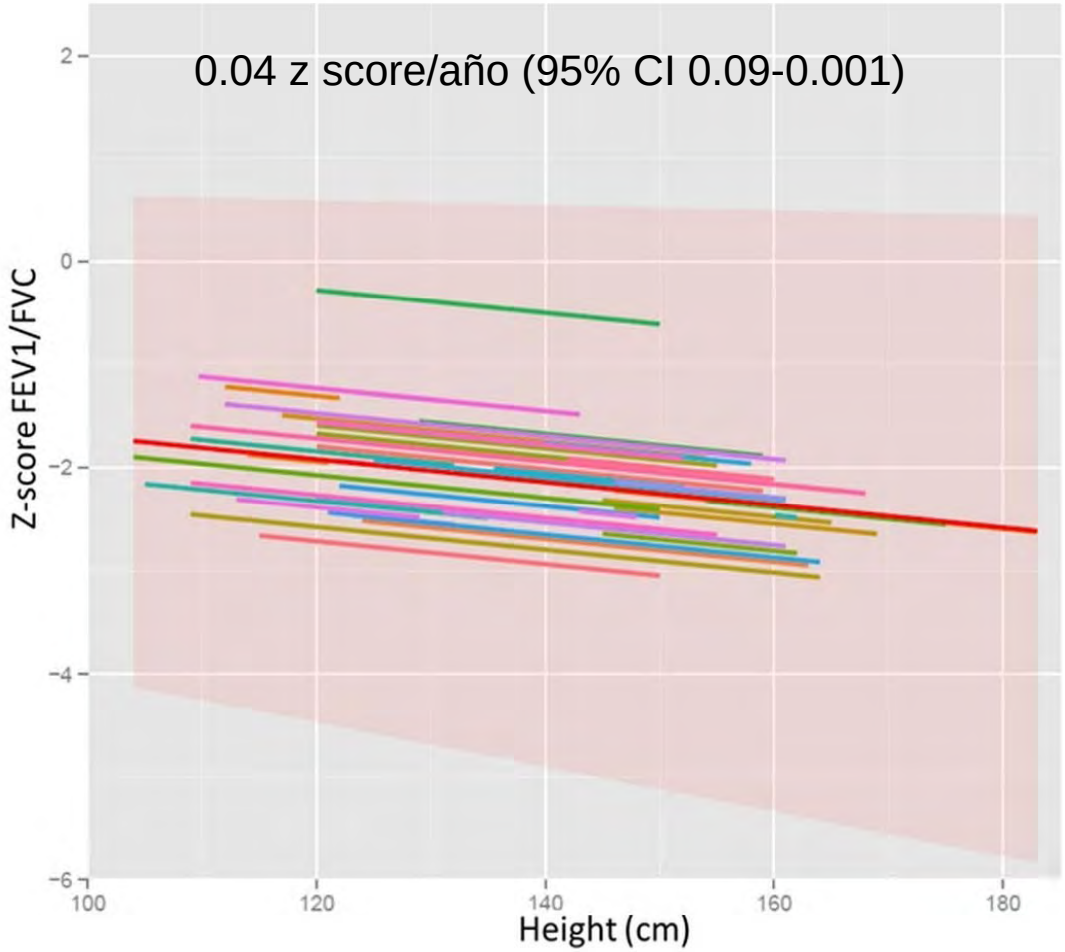
Resultados

VEF_1/CVF Vs Talla

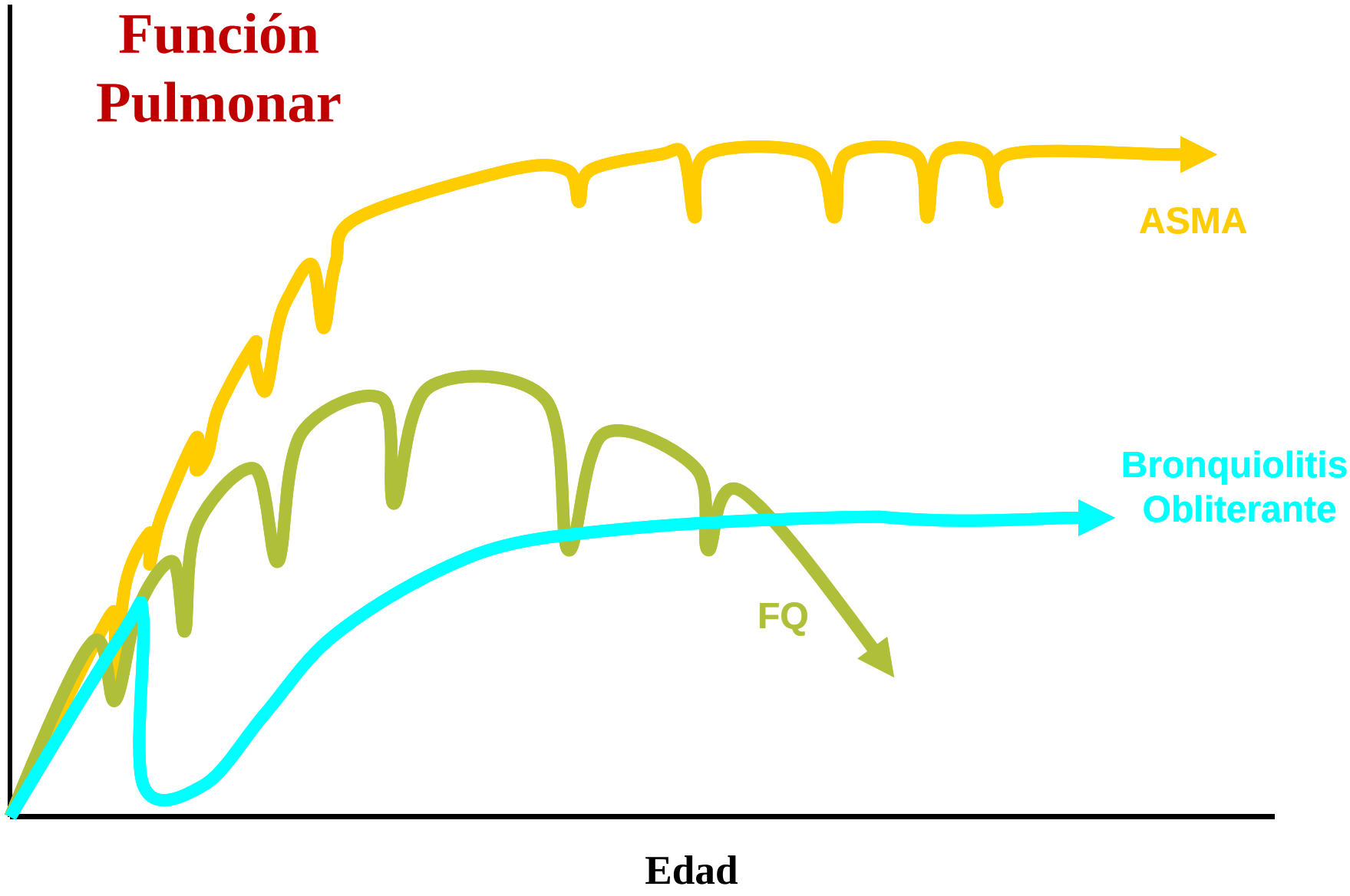


Resultados

Score Z VEF_1/CVF Vs Talla



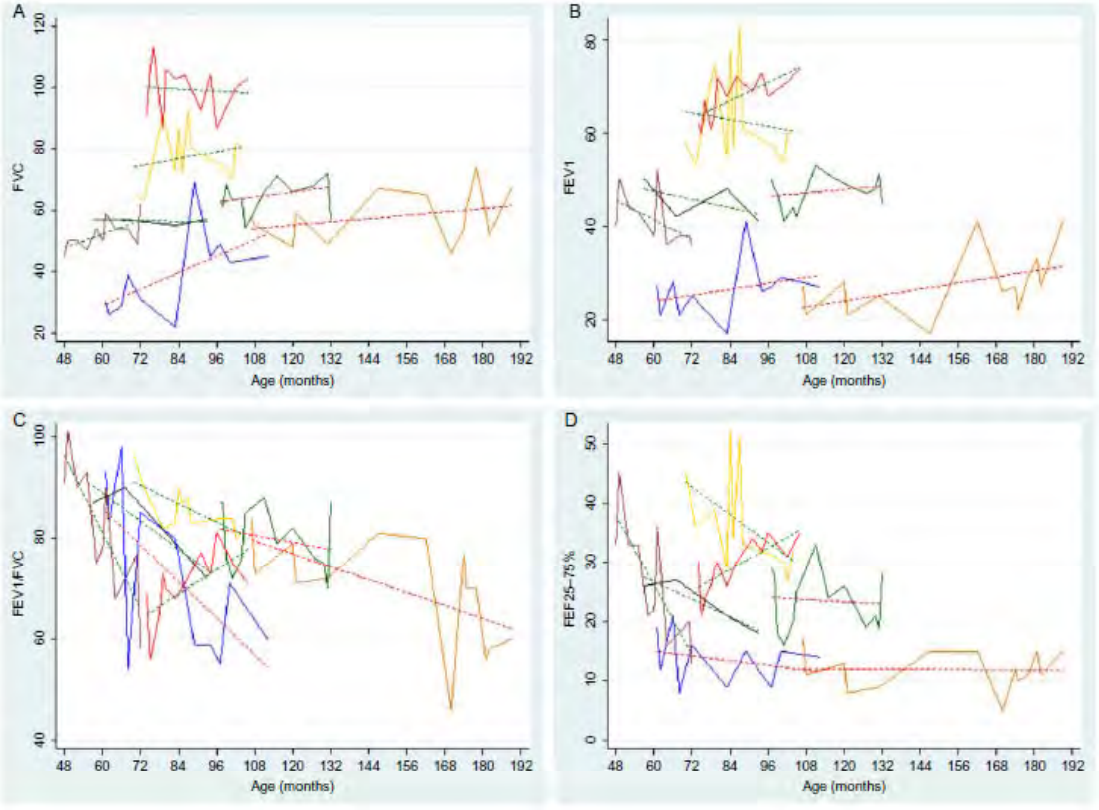
Colom AJ, et al. Thorax 2015;70:169–174.


Función
Pulmonar
ASMA
Bronquiolitis
Obliterante
FQ
Edad

Dysanaptic growth of lung and airway in children with post-infectious bronchiolitis obliterans

Ricardo A. Mosquera[1], Syed S. Hashmi[2], Susan E. Pacheco[1], Alexandra Reverdin[1], Justyna Chevallier[1] and Giuseppe N. Colasurdo[1]

1 Division of Pulmonary Medicine, Department of Pediatrics, University of Texas Medical School at Houston, Houston, TX, USA
2 Pediatric Research Center, Department of Pediatrics, University of Texas Medical School at Houston, Houston, TX, USA



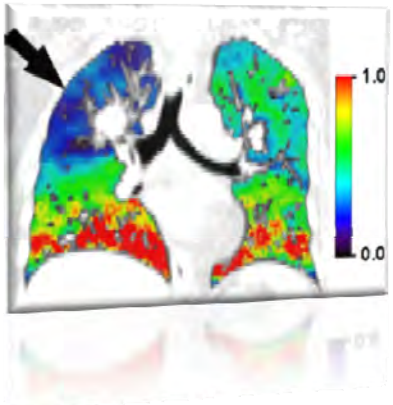
Clin Respir J 2014; 8: 63–71

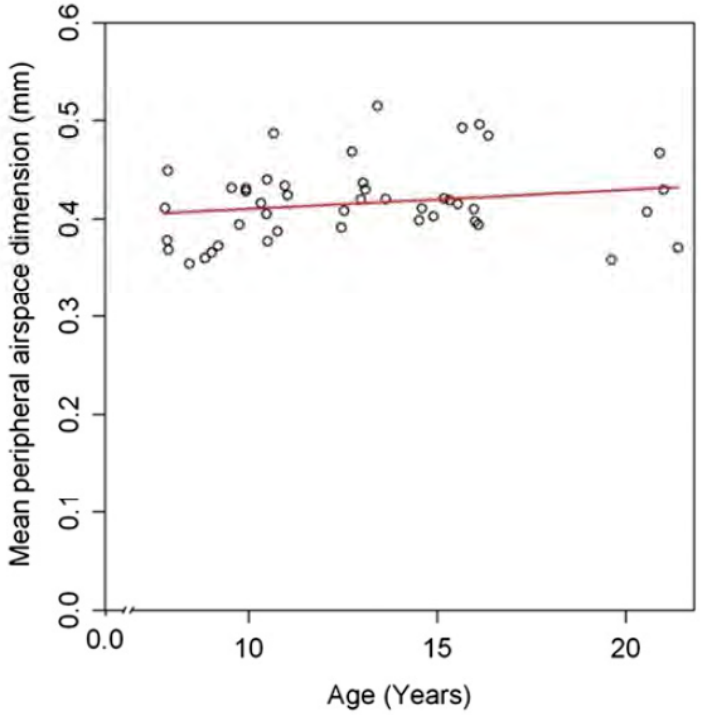
Alveolarization Continues during Childhood and Adolescence

New Evidence from Helium-3 Magnetic Resonance

Manjith Narayanan[1], John Owers-Bradley[2], Caroline S. Beardsmore[1], Marius Mada[2], Iain Ball[2], Ruslan Garipov[2], Kuldeep S. Panesar[2], Claudia E. Kuehni[3], Ben D. Spycher[3], Sian E. Williams[1], and Michael Silverman[1]

[1]Department of Infection, Immunity and Inflammation, University of Leicester, Leicester, United Kingdom; [2]School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; and [3]Institute of Social and Preventive Medicine, University of Bern, Bern, Switzerland





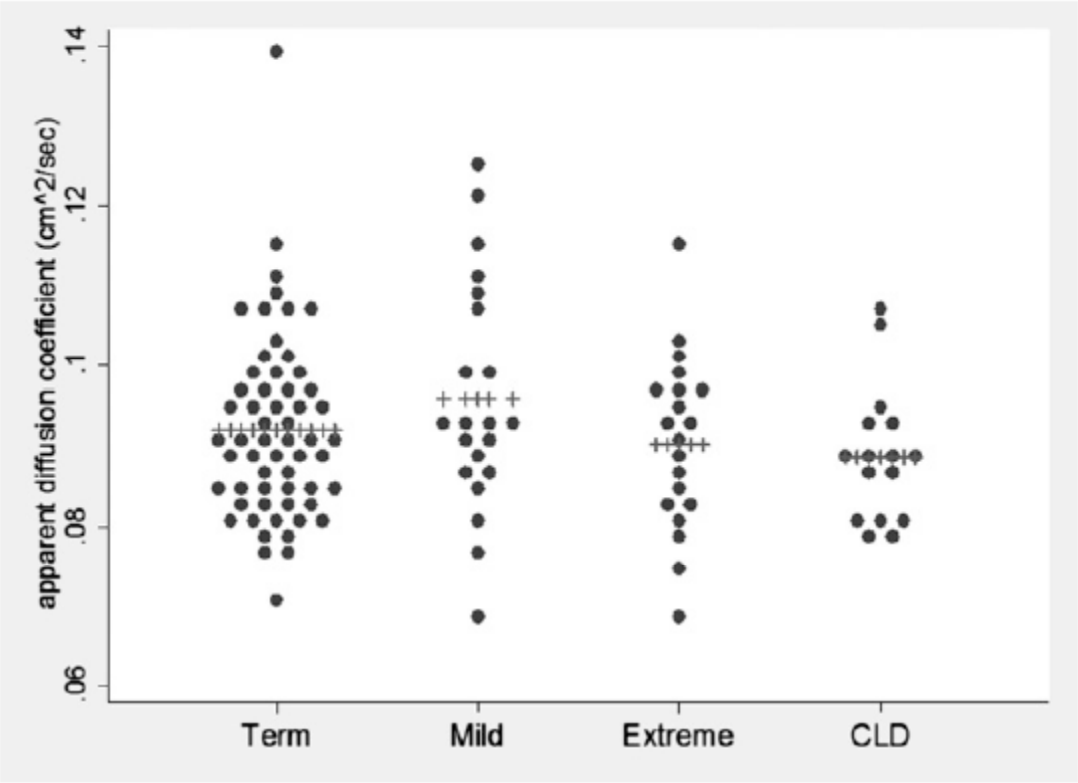
Am J Respir Crit Care Med Vol 185, Iss. 2, pp 186–191, Jan 15, 2012

Catch-up Alveolarization in Ex-Preterm Children

Evidence from ^{3}He Magnetic Resonance

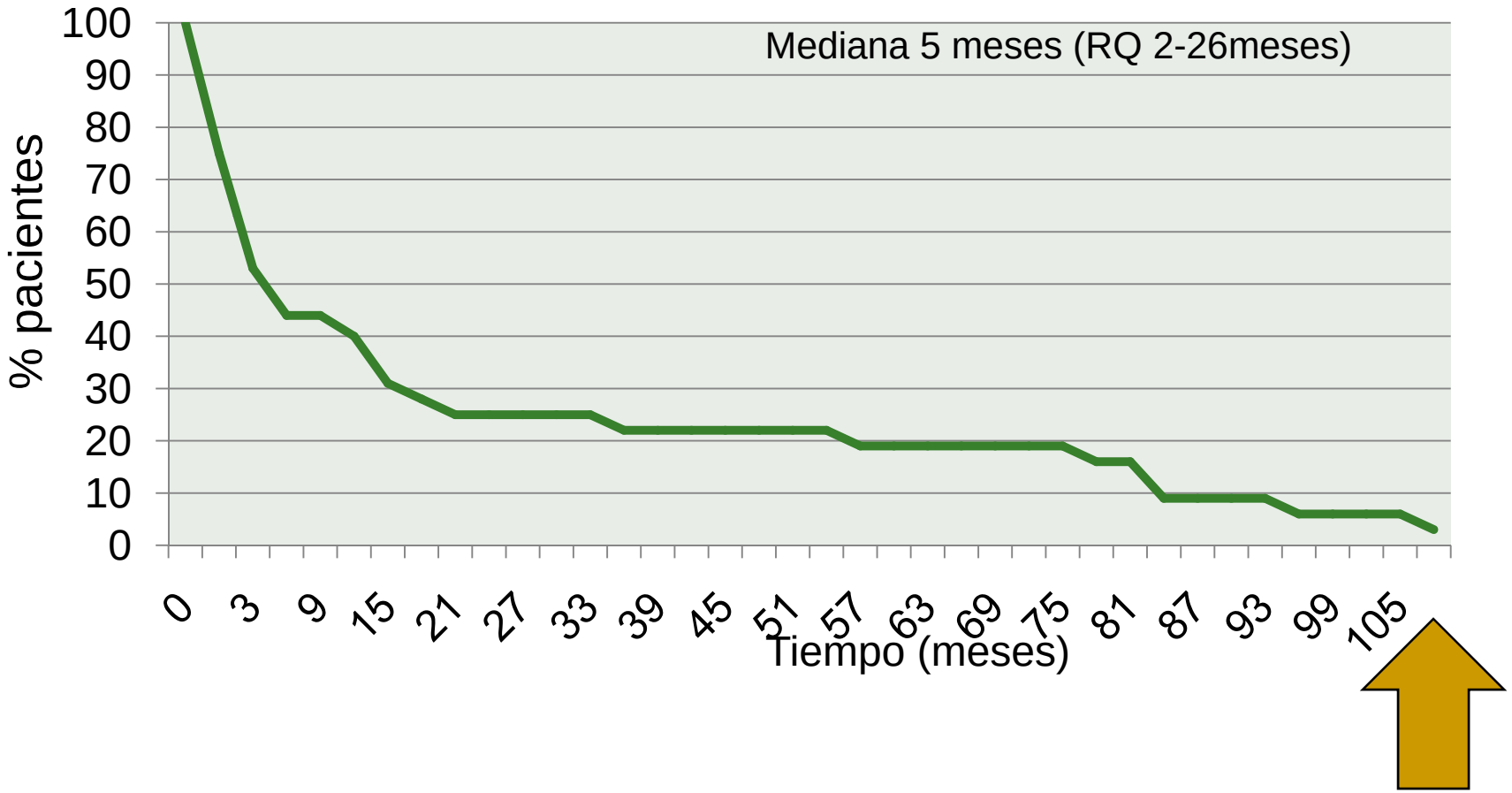
Manjith Narayanan[1], Caroline S. Beardsmore[1], John Owers-Bradley[2], Cristian M. Dogaru[3], Marius Mada[2], Iain Ball[2], Ruslan R. Garipov[2], Claudia E. Kuehni[3], Ben D. Spycher[3], and Michael Silverman[1]

[1]Department of Infection, Immunity and Inflammation, University of Leicester, Leicester, United Kingdom; [2]School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; and [3]Institute of Social and Preventive Medicine, University of Bern, Bern, Switzerland



Am J Respir Crit Care Med Vol 187, Iss. 10, pp 1104–1109, May 15, 2013

Requerimientos de oxígeno



Colom AJ, et al. Thorax 2015;70:169–174.

OXIGENACIÓN NOCTURNA Y FUNCIÓN PULMONAR EN NIÑOS CON BRONQUIOLITIS OBLITERANTE POSINFECCIOSA

Colom, Alejandro; Selvino Verónica, Kuhar, Florencia; Teper, Alejandro.

n	40
Edad (años)	12 (4-19)
Masculinos	22
SapO2	98 ± 1

Test de marcha

Variable	
Distancia recorrida	459 ± 107m.
% de la distancia esperada*	63 ± 8
SapO2 reposo	97 ± 1
SapO2 al finalizar estudio	93 ± 3
Indice de fatiga Borg	0 (0-2)

*** GUTIÉRREZ M, RIOSECO F, ROJAS A, CASANOVA D. Determinación de valores espirométricos en una población chilena normal mayor de 5 años, a nivel del mar. Rev Méd Chile 1996; 124: 1295-306.**

Oximetría nocturna

Variable	
Tiempo de estudio libre de artefactos	518 ± 102
Episodios de hipoxia nocturna *	0
SapO2 (x±DS)	96 ± 2
SapO2 inferior (x±DS)	90 ± 3
Tiempo con SapO2 <90%	0.56% (20 segundos)

* Hipoxia nocturna: SapO2<90% por >5% del tiempo de estudio.

Functional capacity assessment during exercise in children and adolescents with post-infectious bronchiolitis obliterans

Rita Mattiello,[1] Edgar E. Sarria,[2] Ricardo Stein,[3] Gilberto Bueno Fischer,[4]
Helena Teresinha Mocelin,[5] Sergio Saldanha Menna Barreto,[4]
João Antônio Bonfadini Lima,[6] Diego Brandenburg[7]

Table 2 - Comparison of variables for the 6-minute walk test and the cardiopulmonary exercise test

	6-minute walk test	Cardiopulmonary exercise test	
	Mean ± SD	Mean ± SD	p
Respiratory rate (PE)	30.0±3.7	57.4±9.0	0.000*
Heart rate (PE)	124.6±8.7	182.5±11.6	0.000*
Heart rate (MP)	62.5±9.4	91.6±5.8	0.000*
Minimum SaO_2	94.1±3.2	90.2±4.6	0.001*
Borg (PE)	Median (quartiles)	Median (quartiles)	
Fatigue in legs	0 (0-3)	3 (1-7)	0.005*
Dyspnea	1 (0-3)	2 (1-6)	0.047*

MP = predicted maximum heart rate; PE = post-exercise; SaO_2 min = lowest oxygen saturation during exercise; SD = standard deviation.
* $p < 0.05$

J Pediatr (Rio J). 2008;84(4):337-343

Nuevos Desafíos…..


2009
Enero
Febrero
Marzo
Mayo
Junio
Agosto
Septiembre
Octubre

21 años

Mas aún…..

Mas aún…..

Para finalizar…

- En el daño pulmonar que se produce en la bronquiolitis obliterante postinfecciosa la reacción inflamatoria innata cumple un rol destacado.

- El tratamiento para evitar su desarrollo debería contemplar esta reacción inflamatoria.

- La evolución a largo plazo de los pacientes con bronquiolitis obliterante postinfecciosa es de lenta y progresiva mejoría.

Muchas gracias !