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Infecciones y síndrome nefrótico: Profilaxis y tratamiento

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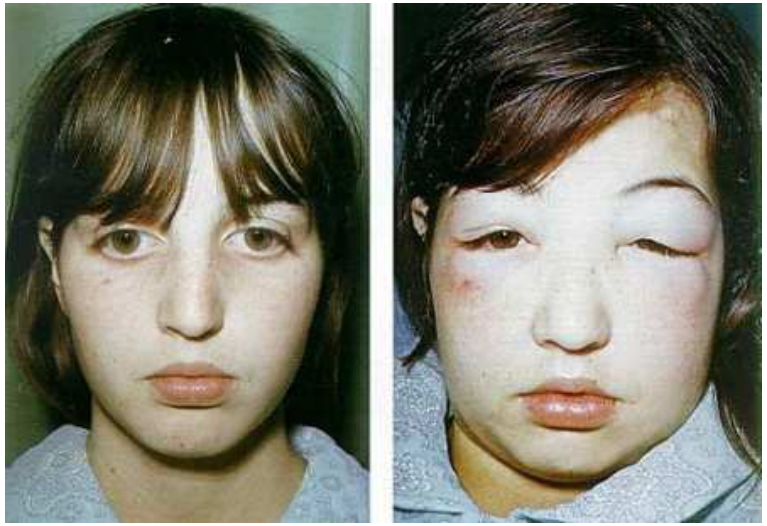
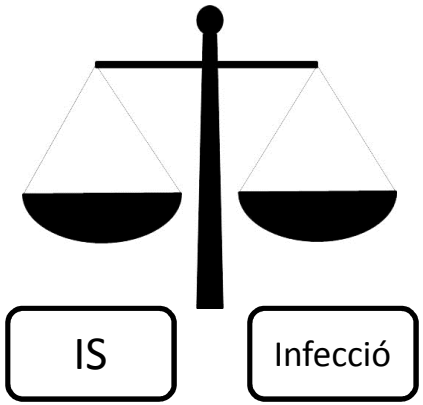
Prevención de la infección

- Correcto control del Sd. Nefrótico
- Immunizaciones adecuadas
- ¿Profilaxis antibiótica?
- ¿Terapia sustitutiva con inmunoglobulinas?



Control de la proteinuria

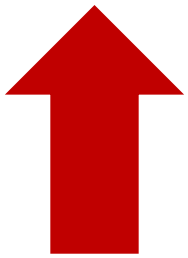
REV. HOSP. CLÍN. FAC. MED. S. PAULO 59(5):273-278, 2004



ORIGINAL RESEARCH

INFLUENCE OF NEPHROTIC STATE ON THE INFECTIOUS PROFILE IN CHILDHOOD IDIOPATHIC NEPHROTIC SYNDROME

CONCLUSION: The nephrotic condition, whether as part of a course of frequent relapses, steroid dependence, or steroid resistance, conferred greater susceptibility to infection among the patients with idiopathic nephrotic syndrome. The results of this study suggest that the best preventive action against infection in this disease is to control the nephrotic state.



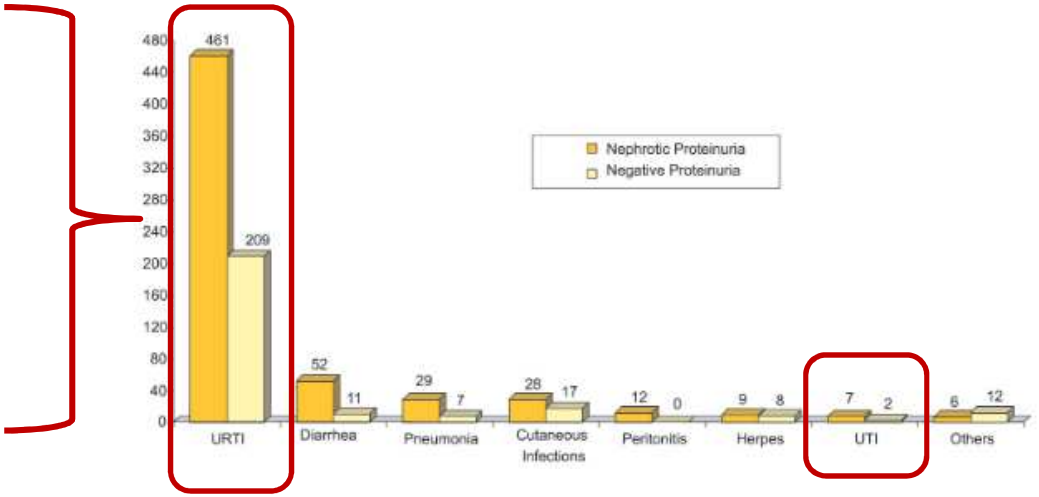
Control de la proteinuria

Table 2 - Comparison of the incidence-density of infections (number of infections/ 100 patients/month) during the periods with nephrotic proteinuria and with negative proteinuria.

Groups and Subgroups	Nephrotic Proteinuria	Negative Proteinuria	(z score)	(P)
I	55.26	3.81	-8.365	<.001*
IA	15.79	1.36	-1.192	.117
IB	42.86	1.61	-1.806	.035*
IC	53.40	3.44	-3.520	<.001*
ID	57.48	5.09	-6.569	<.001*
II	45.49	4.99	-3.021	.001*

* Statistic significance

Corticoides



Inmunización del paciente con SN

Vall d'Hebron
Hospital
Servei de Medicina Preventiva
i Epidemiologia

VACUNACIÓN EN NIÑOS CON NEFROPATÍA CRÓNICA: HEMODIÁLISIS Y TRASPLANTE RENAL (actualizado septiembre 2015)

1- VHB: doble dosis y control respuesta vacunal.

2- Neumococo: 13V seguida de 23V.

3- Gripe: anual a partir de los 6m de edad.

4- Si tto IS: no vacunas atenuadas.

Inmunización del paciente con SN

Eur J Pediatr (2010) 169:73–76
DOI 10.1007/s00431-009-0989-x

ORIGINAL PAPER

Primary peritonitis in children with nephrotic syndrome: results of a 5-year multicenter study

Nermin Uncu · Mehmet Bülbül · Nurdan Yıldız · Aytul Noyan · Cemlettin Koşan · Salih Kavukçu · Salim Çalışkan · Zübeyde Gündüz · Nesrin Beşbaş · Ayfer Gür Güven

"we suggest that immunization against pneumococcus is not indicated in children with steroid-responsive nephrotic syndrome (NS) and should be reserved for the small number of children who have steroid-dependent or steroid-resistant NS"

Profilaxis antibiótica

Interventions for preventing infection in nephrotic syndrome (Review)

Wu HM, Tang JL, Sha ZH, Li Y, Cao I

Main results

Five RCTs conducted in China, including 308 children with nephrotic syndrome were identified. No studies were identified in adults. All studies compared one kind of prophylactic pharmacotherapy (IVIG, thymosin or a compound of Chinese medicinal herbs - TIAOJINING) in addition to baseline treatment with baseline treatment alone. No RCTs were identified comparing antibiotic or non-pharmacological prophylaxis, or pneumococcal vaccination. Three studies showed a significantly better effect of IVIG on preventing nosocomial or unspecified infection in children with nephrotic syndrome (RR 0.39, 95% CI 0.18 to 0.82). Thymosin and TIAOJINING were also effective for reducing the risks of infection in children with nephrotic syndrome with RR 0.50 (95%CI 0.26 to 0.97) and 0.59 (95%CI 0.43 to 0.81) respectively. No serious adverse events were reported.

Profilaxis antibiótica

Prevention of Serious Bacterial Infections in New-Onset Nephrotic Syndrome: A Survey of Current Practices

Clin Pediatr. 2002;41:47-49

- Respuesta de 66 centros.
- 41% han visto pacientes con SN e infecciones bacterianas graves.
- 18% profilaxis antibiótica.
- 52% vacuna antineumocócica.

Profilaxis antibiótica

Pediatr Nephrol (2015) 30:91–101
DOI 10.1007/s00467-014-2903-7

ORIGINAL ARTICLE

Best practice guidelines for idiopathic nephrotic syndrome: recommendations versus reality

Table 3 Comparison of symptomatic therapy and hospitalization data at onset between the PUs and PNUs

Symptomatic therapy/hospitalization	Total patient cohort (n=218)	Pediatrics units (n=132)	Pediatric nephrology units (n=86)	p value
Symptomatic therapy				
Albumin infusions	119 (54.5)	69 (52)	50 (58)	0.72
Diuretics	139 (63.7)	82 (62.1)	57 (66.2)	0.13
Vitamin D	95 (43.6)	51 (38.6)	44 (51.2)	0.068
Proton pump inhibitors or H2 antagonists	98 (44.9)	49 (22.5)	49 (57)	0.016
ASA	47 (21.5)	18 (13.6)	29 (33.7)	<0.0001
Calcium (carbonate or lactate)	14 (6.4)	9 (6.8)	5 (5.8)	0.34
Ca channel blockers, ACE inhibitors	9 (4.1)	4 (3)	5 (5.8)	0.30
Antibiotic prophylaxis	34 (15.6)	18 (13.6)	16 (18.6)	0.25
Hospitalization data				
Hospitalization (days)	10.7 (2–35)	10.9 (2–35)	10.4 (2–29)	0.41
Blood samples/days of hospitalization	0.5 (0.1–1.5)	0.49 (0.1–1.2)	0.47 (0.1–1.5)	0.70

Profilaxis antibiótica

964 *Archives of Disease in Childhood*, 1987, **62**

Penicillin resistant pneumococcal peritonitis in nephrotic syndrome

L S MILNER, F E BERKOWITZ, E NGWENYA, U KALA, AND D JACOBS

Pediatr Nephrol (1996) 10: 639–641

Pediatric Nephrology

Brief report

Serious infections due to penicillin-resistant *Streptococcus pneumoniae* in two children with nephrotic syndrome

Mohammed Ilyas[1], Shane Roy III[1], Seema Abbasi[2], Robert J. Leggiadro[3], B. Keith English[2], and Robert J. Wyatt[1]

"posiblemente poco sentido ahora que se puede vacunar pacientes < 2 años con Pn 13V"

Profilaxis antibiótica

Brief report

Fatal *Pneumocystis* pneumonia in a child treated for focal segmental glomerulosclerosis*

Jerome L. Murphy[1], Henry L. Kano[1], Peter J. Chenaille[2], and Sudesh P. Makker[1]

[1] Department of Pediatrics, University of California, Davis, Sacramento, CA 95817, USA
[2] Department of Pediatrics, David Grant Medical Center, Travis Air Force, California, USA

Received September 10, 1992; received in revised form January 26, 1993; accepted February 4, 1993

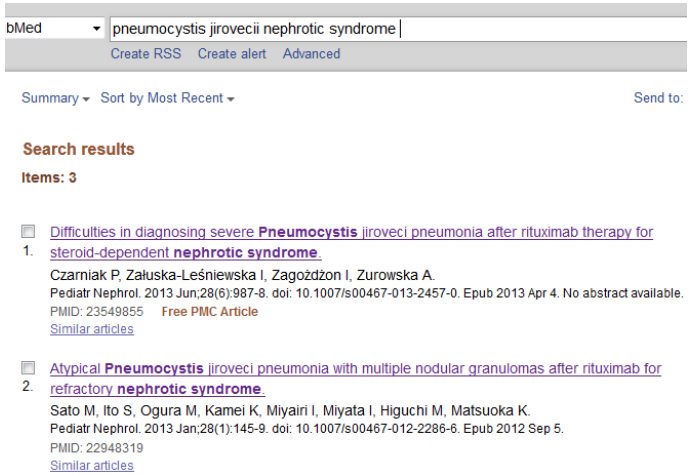
"treated with pulse methylprednisolone and chlorambucil therapy"
"this is the first report of a pediatric patient whose treatment for FSGS resulted in PCP, raising the issue of PCP prophylaxis for these patients"

Profilaxis antibiótica

Pediatr Nephrol (2013) 28:987–988
DOI 10.1007/s00467-013-2457-0

LETTER TO THE EDITORS

Difficulties in diagnosing severe *Pneumocystis jiroveci* pneumonia after rituximab therapy for steroid-dependent nephrotic syndrome



"we propose initiating PCP prophylaxis at the beginning of RTX protocol"

Terapia sustitutiva con inmunoglobulinas

"**IVIG**, thymosin, oral transfer factor, BCG vaccine, Huangqi granules and TIAOJINING may have positive effects on the prevention of nosocomial or unspecified infection with no obvious serious adverse events in children with nephrotic syndrome.
However **the methodological quality of all studies was poor, the sample sizes small, and all studies were from China,** and thus **there is no strong evidence** on the effectiveness of these interventions"

Tratamiento de la infección

Pediatr Nephrol (2009) 24:2121–2128
DOI 10.1007/s00467-007-0633-9

EDUCATIONAL FEATURE

Congenital nephrotic syndrome

"a high degree of suspicion for septic infections is warranted"
"the symptoms are often vague and masked by signs of focal infections occurring at the same time"
"parenteral antibiotic therapy should be started promptly on suspicion and should cover the major hospital strains of bacteria"
"response to treatment even in septic infection is usually excellent"

Tratamiento de la infección

Pediatr Nephrol (1999) 13:835–837

BRIEF REPORT

You-Lin Tain · Ghi-Jen Lin · Tsang-Wee Cher

Microbiological spectrum of septicemia and peritonitis in nephrotic children

Table 1 Nephrotic children with sepsis and peritonitis (*ND* not determined, *WBC* white blood cell count, *NS* nephrotic syndrome)

Patient no.	Sex	Age at onset of NS/ infection (years)	Microorganisms isolated from blood culture	Microorganisms isolated from ascites/WBC of ascites	Serum albumin level (g/dl)	Serum IgG level (mg/dl)	Remarks
1	M	2.9/3	*Enterococcus*	ND	0.9	ND	
2	M	1.2/5.2	*Enterobacter cloacae*	ND	2	283.9	
3	F	1.5/1.8	*Streptococcus pneumoniae*	ND	1.6	180	Died
4	M	1.5/7.8	*Streptococcus pneumoniae*	ND	0.4	323	
5	M	2.3/4.1	*Streptococcus pneumoniae*	ND	0.5	ND	Penicillin resistant
6	M	0.1/0.3	*Streptococcus pneumoniae*	ND	0.5	180	Died Penicillin resistant
7	F	2.7/4.3	*Escherichia coli*	ND	0.6	180	
8	M	3.3/4.5	Group D streptococcus	ND	1.1	121	
9	F	1.8/1.8	*Acinetobacter baumannii*	ND	1.6	213	
10	F	12.8/13	Group B salmonella	ND	4	ND	Septic arthritis
11	M	8/11	No growth	*Streptococcus viridans*/ WBC 13,100	1.2	287	
12	M	9/10	No growth	*Klebsiella pneumoniae*	1.3	180	
13	F	12.6/13.6	No growth	No growth/ WBC 23290	0.9	ND	
14	M	3.5/4.5	No growth	*Escherichia coli*/ WBC 3380	0.7	145	
15	M	3/14.5	No growth	No growth/ WBC 1500	1.5	117	
16	M	4/6.1	No growth	No growth/ WBC 250	1.1	158	
17	M	4.7/5.3	No growth	No growth/ WBC 327	0.9	115	
18	M	13/13.5	No growth	*Neisseria meningitidis*/ WBC 1,620	1.4	239	

Tratamiento de la infección

- Valorar estado clínico del paciente.
- Valorar grado de IS.
- Valorar estado vacunal.
- Atención peritonitis.
- Si indicación Abterapia en ausencia de foco y cuadro grave: **cefalosporinas 3a generación IV**.

SNC finlandés

Archives of Disease in Childhood, 1976, **51**, 344.

Congenital nephrotic syndrome of Finnish type

Study of 75 patients

NIILO-PEKKA HUTTUNEN
From the Children's Hospital, University of Helsinki, Finland

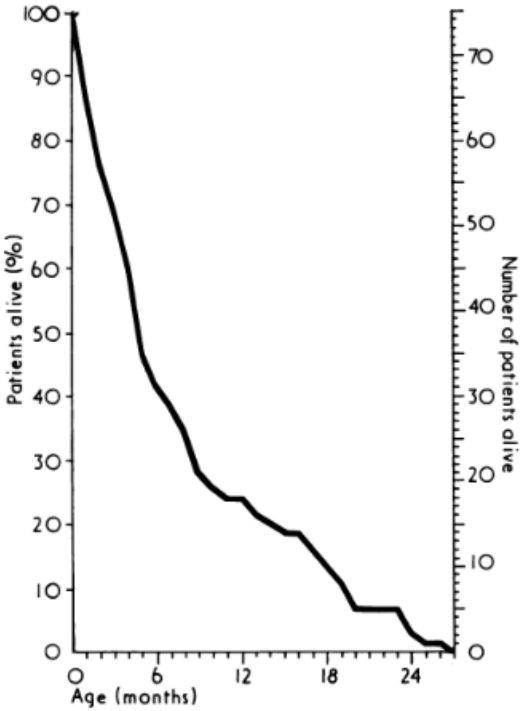


FIG. 3.—*Length of survival of 75 CNF infants*

TABLE IV

Immediate cause of death of CNF patients. Diagnosis is based on clinical and necropsy findings in 58 cases and on clinical findings alone in 17

Cause of death	No. of cases	%
Infection	23	31
Sepsis	6	
Pneumonia	6	
Peritonitis	4	
Meningitis	2	
Other	5	
Transplantation trial	9	12
Thrombotic complication	4	5
Cerebral vein thrombosis	1	
Pulmonary artery thrombosis	1	
Pulmonary embolism	1	
Sagittal sinus thrombosis	1	
Miscellaneous	7	9
Aspiration	1	
Cerebral haemorrhage	1	
Interstitial occlusion	1	
Kernicterus	1	
Pulmonary haemorrhage	1	
Pulmonary atelectasis	1	
Subarachnoid haemorrhage	1	
CNF alone	32	43
Total	75	100

SNC finlandés

Pediatr Nephrol (1997) 11: 148–152

Pediatric Nephrology

Original article

Table 5. Number and incidence of infections in CNF children with and without gammaglobulin prophylaxis

	No gammaglobulin	Intravenous gammaglobulin infusions[a]		
		×2/week	×1/week	×1/2 weeks
No. of children	21	7	9	4
Patient years	14.7	4.7	3.5	1.5
Sepsis	2.7 (39)[b]	1.9 (9)	2.6 (9)	4.0 (6)
Suspected sepsis	2.0 (30)	3.2 (15)	4.0 (14)	2.0 (3)
Focal bacterial infection	2.0 (30)	3.0 (15)	0.6 (2)	2.7 (4)
Viral infection	2.1 (31)	2.8 (52)	1.1 (4)	5.4 (8)
Superficial yeast infection	0.8 (12)	0.4 (2)	0.6 (2)	–
Total	9.8 (144)	11.0 (52)	8.9 (31)	14.1 (21)

[a] The usual dose was 1 g of immunoglobulin per infusion except in 2 children who received 0.5 g. One child was first given 0.5 g and later 1 g. The infusions were given once or twice a week or in a few children once every 2 weeks
[b] Infection episodes per patient year (no. of episodes)

Table 4. Number and incidence of infections in CNF children with and without antimicrobial prophylaxis

	No antibiotic	Antibiotic[a]
No. of children	21	11
Patient years	13.4	11.1
Sepsis	2.4 (32)[b]	2.8 (31)
Suspected sepsis	2.5 (34)	2.5 (28)
Focal bacterial infection	2.4 (32)	1.8 (20)
Viral infection	2.0 (27)	2.5 (28)
Superficial yeast infection	0.7 (10)	0.5 (6)
Total	10.2 (137)	10.1 (112)

[a] The antibiotics were: phenoxymethylpenicillin (orally) or benzylpenicillin (parenterally) alone (5.6 years), combination of intramuscular benzylpenicillin and oral co-trimoxazole (3.6 years), co-trioxazole alone (1.7 years) and phenoxymethylpenicillin with nitrofurantoin or trimethoprim (0.2 years)
[b] Infection episodes per patient year (no. of episodes)

Take home messages

- Importancia del control de la enfermedad.
- Poca evidencia científica de las diferentes profilaxis: profilaxis AB y GGIV no recomendadas de manera rutinaria.
- Vacunación antineumocócica indicada.
- Tratamiento precoz de las infecciones.
- Atención a la inmunosupresión asociada.
- ¿Actuación en el SNC tipo finlandés?

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Moltes gràcies!