INTERVENTIONS FOR PREVENTING INFECTION IN NEPHROTIC SYNDROME

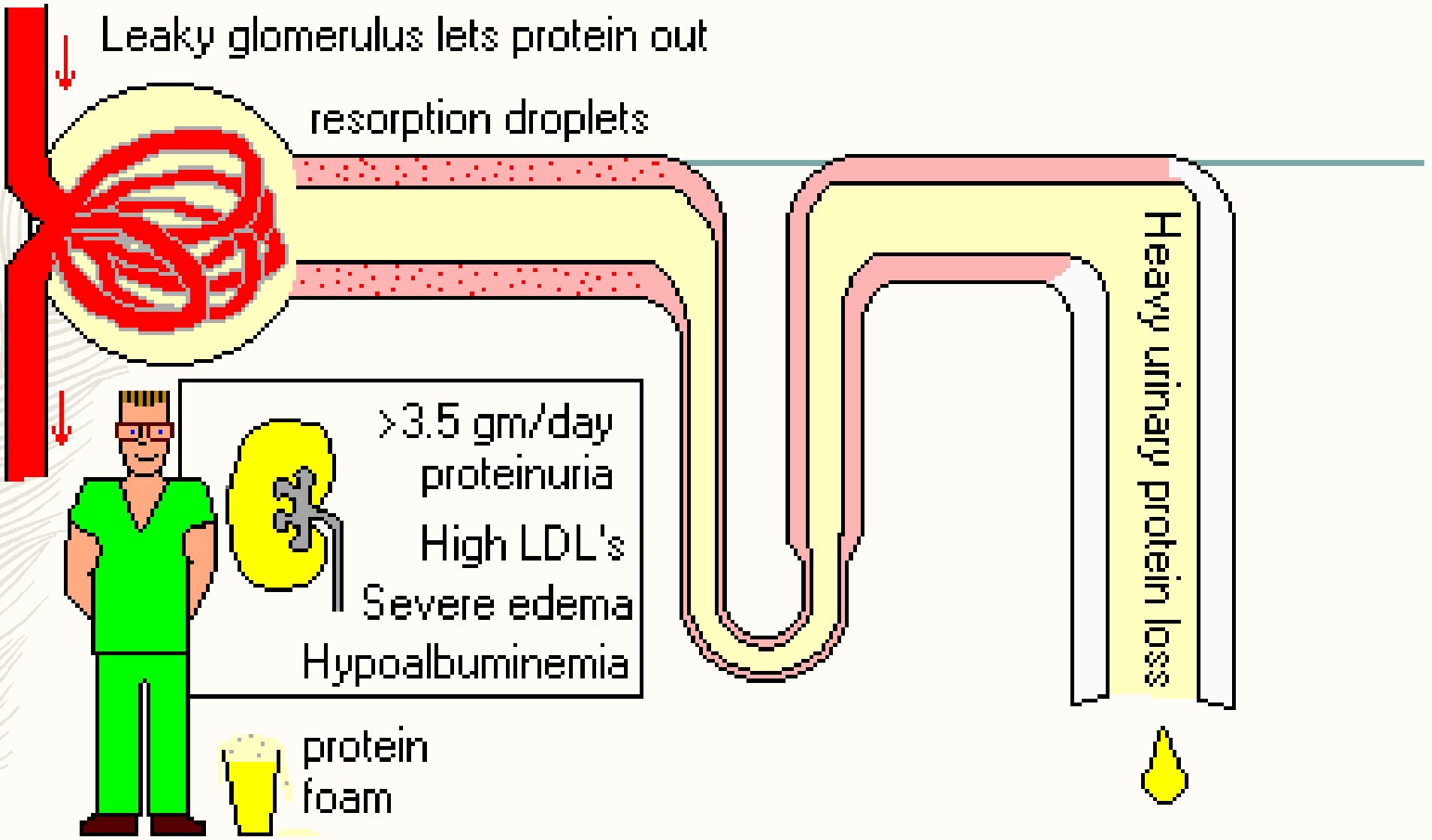
VO THI TUONG VY, MD

Department of Nephrology and Endocrinology

CONTENTS

- Back ground
- Objective
- Methods
- Results
- Conclusions

Nephrotic Syndrome



BACKGROUND

- Infection is one of the most common complications in patients with nephrotic syndrome, especially in children.
- Infections: closely associated with frequent relapses and steroid dependency in NS →HIGH mortality, morbidity and health care costs, especially in developing countries
- Many different prophylactic interventions have been used or recommended for reducing the risks of infection in NS
- Prophylactic intervention can be recommended for routine use based on the current evidence is still unknown.

OBJECTIVE

- Assess benefits and harms of any prophylactic intervention for reducing the risk of infection in children and adults with nephrotic syndrome, regardless of cause or pathologic change.

Interventions for preventing infection in nephrotic syndrome (Review)

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

THE COCHRANE COLLABORATION®

METHODS

- All RCTs and quasi-RCTs looking at the benefits and harms of any prophylactic intervention (pharmacological or nonpharmacological) compared with placebo, no treatment or other pharmacological or non-pharmacological treatment were eligible for inclusion.
- Information was collected on methods, participants, interventions and outcomes
- Results were expressed as risk ratios (RR) for dichotomous outcomes or as mean differences (MD) for continuous data with 95% confidence intervals (CI).

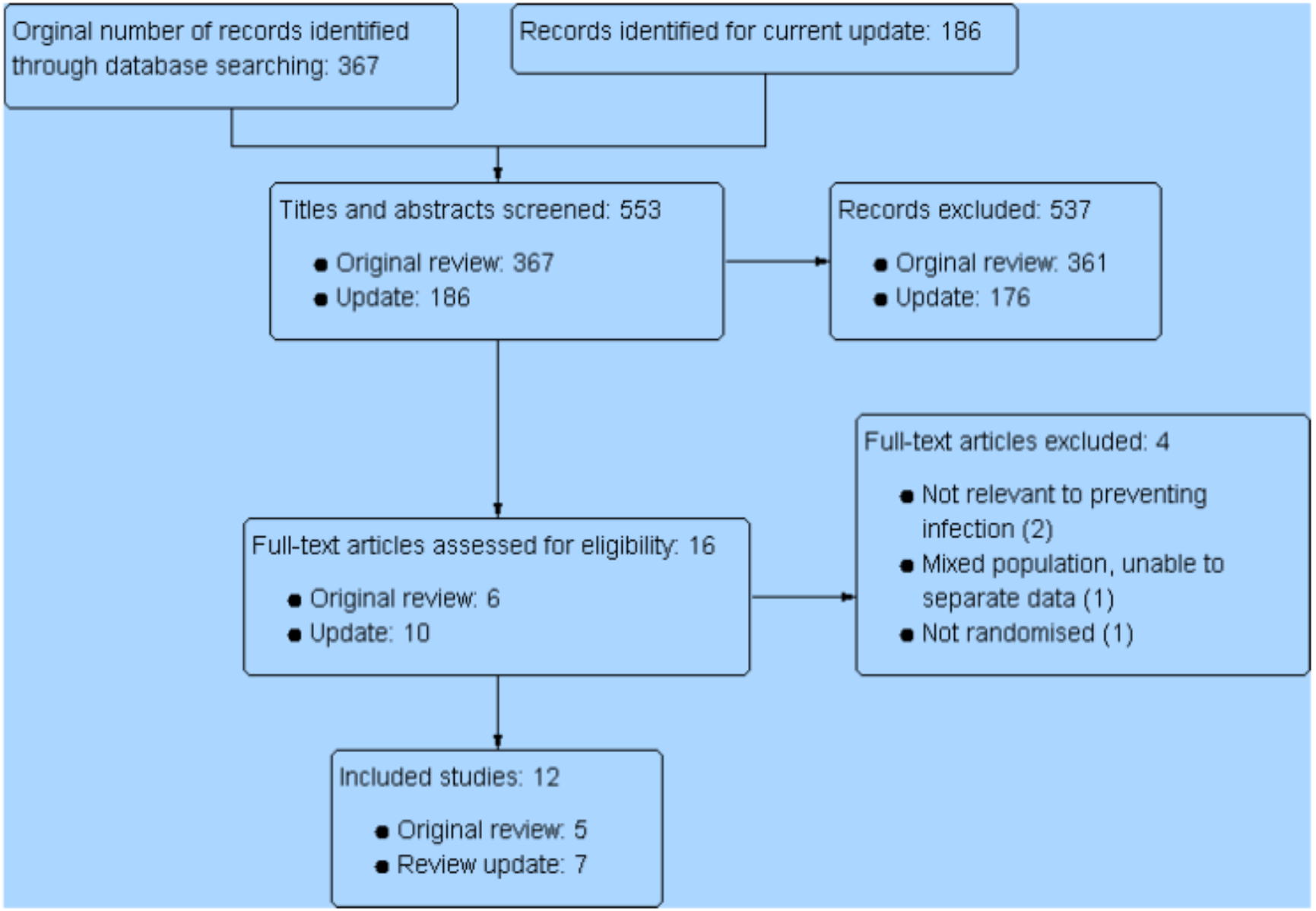
SEARCH METHODS

– The Cochrane Renal Group’s specialised register

- The Cochrane Central Register of Controlled Trials (CENTRAL)
- MEDLINE and Pre-MEDLINE (from 1966), EMBASE (from 1980)
- China Biological Medicine Database (1979 to December 2009)
- Chinese Science and Technique Journals Database (to December 2009)
- China National Infrastructure (to December 2009)
- WangFang database (to December 2009)
- Reference lists of nephrology textbooks, review articles, relevant studies and abstracts from nephrology meetings without language restriction.

– Date of last search: 6 February 2012

Figure 1. Study flow diagram.



RESULTS

- Twelve studies - 762 children with NS
- All from China, no other countries
- All studies compared one kind of prophylactic pharmacotherapy: IVIG, thymosin, oral transfer factor, mannan peptide tablet, BCG vaccine, polyvalent bacterial vaccine (Lantigen B) and two kinds of Chinese medicinal herbs plus baseline treatment with baseline treatment alone
- No RCTs were identified comparing antibiotics, non-pharmacological prophylaxis, or pneumococcal vaccination

IVIG

Analysis 1.1. Comparison 1 IVIG + baseline treatment versus baseline treatment, Outcome 1 Number of patients developing infection.

Review: Interventions for preventing infection in nephrotic syndrome

Comparison: 1 IVIG + baseline treatment versus baseline treatment

Outcome: 1 Number of patients developing infection

Study or subgroup	IVIG n/N	Baseline treatment n/N	Risk Ratio M-H,Random,95% CI	Weight	Risk Ratio M-H,Random,95% CI
Dang 1999	3/22	15/32		12.9 %	0.29 [0.10, 0.89]
Dou 2000	2/27	12/29		8.5 %	0.18 [0.04, 0.73]
Tong 1998	15/48	26/50		43.7 %	0.60 [0.37, 0.99]
Wu 2009	8/20	15/20		34.9 %	0.53 [0.29, 0.97]
Total (95% CI)	**117**	**131**		**100.0 %**	**0.47 [0.31, 0.73]**

Total events: 28 (IVIG), 68 (Baseline treatment)

Heterogeneity: $Tau^2 = 0.04$; $Chi^2 = 3.86$, df = 3 (P = 0.28); $I^2 = 22\%$

Test for overall effect: Z = 3.44 (P = 0.00059)

Test for subgroup differences: Not applicable

Analysis 1.2. Comparison 1 IVIG + baseline treatment versus baseline treatment, Outcome 2 Mortality.

Review: Interventions for preventing infection in nephrotic syndrome

Comparison: 1 IVIG + baseline treatment versus baseline treatment

Outcome: 2 Mortality

Study or subgroup	IVIG n/N	Baseline treatment n/N	Risk Ratio M-H,Random,95% CI	Risk Ratio M-H,Random,95% CI
Tong 1998	0/48	2/50		0.21 [0.01, 4.23]

RESULTS

- **Thymosin:** 1 study, 40 participants (Zhang 2000) reduced the risk of infection in children with NS(RR 0.50, 95% CI 0.26 to 0.97).
- **BCG vaccine injection** 1 study, 38 participants (Kang 2003) prevented secondary infection in children with NS (RR 0.68, 95% CI 0.48 to 0.95)
- **Mannan peptide: 1** study, 67 participants (Guo 2008) not superior to the control for preventing secondary infections in children with NS (RR 0.46, 95% CI 0.21 to 1.01)
- **Oral transfer factor: 1** study, 98 participants (Rao 2005) reduced the risk of infection in children with simple NS (RR 0.51, 95% CI 0.35 to 0.73)

CONCLUSIONS

- Compared with control, IVIG, thymosin, oral transfer factor, BCG vaccine injection, Huangqi granules, and TIAOJINING may have positive effects on the prevention of nosocomial infection or unspecified infection
- Mannan peptide and polyvalent bacterial vaccine were not superior to control on the prevention
- No studies were identified that used chemoprophylaxis, pneumococcal vaccination, varicella vaccine or any other non- pharmacological interventions for reducing the risk of infection in children or adults with nephrotic syndrome.
- The methodological quality of all studies was poor, the sample sizes small, and all studies were from China→ NO STRONG EVIDENCE on the effectiveness of these interventions.


CẢM ƠN SỰ LẮNG NGHE