HELICOBACTER PYLORI INFECTION IN EGYPTIAN CHILDREN WITH CHILDHOOD NEPHROTIC SYNDROME

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OBJECTIVES

Helicobacter pylori (H. pylori) infection is common in Egypt, where acquisition of infection occurs at a relatively young age. The possible relationship between H. pylori infection and childhood nephrotic syndrome (NS) has not been investigated yet a causal versus result relationship can be anticipated. Infection (of any kind) is always incriminated in NS relapses and inversely, the use of steroids, the cornerstone of NS treatment, can cause gastric mucosal injury and peptic ulcer disease. Our aim was to investigate NS pediatric patients for H. pylori infection in comparison to normal population and to correlate infection with the state of the disease, response to steroids and duration and dosage of steroid treatment.

METHODS

This study included 100 patients with established NS following up in Pediatric Nephrology Clinic, Children's Hospital, Ain Shams University. Twenty age and sex matched healthy children served as control group. Children who were receiving proton pump inhibitors or had received them within 2 weeks as well as those who received H. pylori eradication therapy within 3 months, or were receiving antibiotics at the time of the study were excluded. Comprehensive clinical data collection both from records and through history taking and examination of patients was done. Laboratory investigations to record relapse and renal functions were done together with detection of H. pylori stool antigens in cases and controls

RESULTS

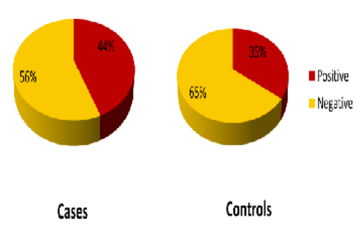
The mean age of cases was 8.5±4.1 years, 66% were males while 44% were females, 88% were steroid responsive (infrequent relapsers, frequent relapsers and steroid dependent) and 12% were steroid resistant. 44% of our patients were positive for H. pylori stool antigen testing versus 35% of controls with no statistically significant difference. We found no significant difference in sex distribution, response to steroids, symptomatology and relapse between H. pylori stool antigen positive and negative patients among our cases. Duration of steroid therapy and receiving low doses (≤1mg/kg) or high doses (> 1mg/ kg) of steroids at the time of the study were comparable among positive and negative H. pylori stool antigen groups

Demographic features of steroid responsive and steroid resistant nephrotic patients.

	Steroid Responsive n=88(%)	Steroid Resistant n=12(%)	P value
Age (yrs):			
Median(range)	9(1-17)	6(2-13)	0.077
Gender:			
Male	59(67.0%)	7(58.3%)	
Female	29(33.0%)	5(41.7%)	0.550
State of disease at time of study			
Remission	76(86.4%)	4(33.3%)	
Relapse	12(13.6%)	8(66.7%)	<0.001*
Total steroid duration in years			
<1	28(31.8%)	3(25.0%)	
1-3	27(30.7%)	3(25.0%)	
3-5	13(14.8%)	4(33.3%)	
5-7	10(11.4%)	1(8.3%)	
>7	10(11.4%)	1(8.3%)	0.696
Steroid dose at time of sampling			
Off steroids	25(28.7%)	1(8.3%)	
Low dose #	43(49.4%)	6(50.0%)	
High dose $	19(21.8%)	5(41.7%)	0.184

* Statistically significant
# Low dose <1mg/kg/day.
$ High dose >1mg/kg/day.

H. pylori stool antigen test among all study population



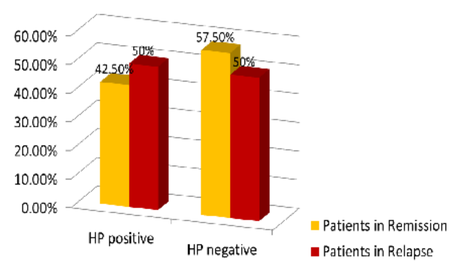
Comparison between steroid responsive and non-responsive patients as regards *H. pylori* infection and symptomatology of gastritis.

	Steroid Responsive n=88(%)	Steroid Resistant n=12(%)	Total	P value
HP results				
Positive	37(42.1%)	7(58.3%)	44	
Negative	51(57.9%)	5(41.7%)	56	0.286
Symptomatology				
Symptomatic	13(14.9)	2(16.7)	15	
Asymptomatic	75(85.1)	10(83.3)	85	1.000

Comparison between patients in remission and those in relapse as regards *H. pylori* infection and symptomatology

	Patients in Remission n=80(%)	Patients in Relapse n=20(%)	Total	P value
HP results				
Positive	34(42.5)	10(50.0)	44	0.546
Negative	46(57.5)	10(50.0)	56	
Symptomatology				
Symptomatic	11(13.9%)	4(20.0%)	15	
Asymptomatic	69(86.1%)	16(80.0%)	85	0.493

Comparison between patients in remission and those in relapse as regards *H. pylori* infection.



Comparison between infected and non-infected nephrotic patients as regards total steroid duration and steroid dose at time of study.

	H. pylori Positive n=44(%)	H. pylori Negative n=56(%)	Total (%)	P value
Steroid duration (yrs)				
<1	12(27.3%)	19(33.9%)	31(31%)	
1-3	12(27.3%)	18(32.4%)	30(30%)	
3-5	6(13.6%)	11(19.6%)	17(17%)	
5-7	5(11.4%)	6(10.7%)	11(11%)	
>7	9(20.5%)	2(3.6%)	11(11%)	0.113
Steroid dose at time of study				
Off steroids	10(22.7%)	16(28.1%)	26(26.3%)	
On low dose *	24(54.5%)	26(46.4%)	50(50.0%)	
On high dose **	10(22.7%)	14(25.0%)	24(24.2%)	0.650

* < 1 mg/kg/day
** > 1 mg/kg/day

CONCLUSIONS

Our study confirmed the high infection rate of H. pylori among Egyptian children. We found no evidence that H. pylori affect response to steroids or bring about relapses in children with childhood NS, also H. pylori infection rate is not increased with higher doses of steroids or longer duration of treatment.

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