Clinical Course, Outcomes and Complications of Thai Pediatric Pure Type versus Mixed Type Lupus Membranous Nephritis

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Background: *Due to the relative infrequency of lupus membranous nephritis (LMN) compared to other types of lupus nephritis (LN) in pediatric patients, the current literature on pediatric LMN is limited. The knowledge regarding clinical manifestations, outcomes and infectious complications are mainly based on studies in the adult population. Similar to disease expression in SLE, the renal manifestations of LMN are affected by environmental factors and vary among racial and ethnic groups.*
Objective: *To describing clinical features, common infectious complications, and outcomes of pediatric-onset LMN in Thailand and the correlation between pure and mixed types of LMN classified by renal pathology.*
Material and Method: *This was a retrospective analysis of 40 patients with LMN as seen in the Pediatric Nephrology Clinic, Maharaj Nakorn Chiang Mai from January, 2003 to December, 2012. Patients were categorized into pure and mixed types of LMN the comparisons of the clinical course, results of treatment and infectious complications between the two types had been analyzed and recorded data for 2 years.*
Results: *Kidney biopsy was performed. Of the 40 patients with LMN, 50% were diagnosed as mixed-type LMN. The clinical symptoms presented including rash, hypertension, edema, serositis and arthritis were found at 57.7%, 45%, 40%, 25% and 25% respectively. All of the patients were treated with an immunosuppressive drug such as: Cyclophosphamide, Azathioprine, Cyclosporine or Mycophenolate mofetil, together with systemic steroids. During the two years follow up, every patient had normal GFR. Twenty nine patients (72.5%) had renal remission in proteinuria with complete remission in 7 patients (17.5%) and partial remission in 22 patients (55%). An average time from the onset to remission was 12 months. GFR and proteinuria were not significant difference between the two groups after treatment. The infections found in patients who received cyclophosphamide include herpes infection, salmonellosis, lung abscess, nocardiosis, giardia intestinalis and cerebral cysticercosis. Furthermore, steroid side effect was avascular necrosis of the hip joint.*
Conclusion: *The mixed-type LMN patients had a higher blood pressure, higher BUN and positive LE cell than those of the pure-type LMN patients. Hypertension at initial presentation can be a predictor of proliferative lesion in renal pathology. However, a proliferative lesion accompanied with LMN does not affect renal outcomes. With similar renal outcomes, the immunosuppressive with low adverse effects may be considered as a preferable treatment.*

Keywords: *lupus membranous nephritis, outcomes, complication, pure type, mixed type, LMN*

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Systemic Lupus Erythematosus (SLE) is a complex chronic autoimmune disease with relapse and remission periods. The incidence of SLE is 0.36 to 0.6 per 100,000 persons annually worldwide and the prevalence of SLE in Southeast Asia is 0.9-3.1 per 100,000 persons[1,2]. The ratio of female to male in SLE varies by age at diagnosis[3]. In an Indian study 70 SLE children from age 4 to 15 years old, the initial clinical manifestations were fever, arthralgia and malar rash for 94.2%, 65.7% and 57.1%, respectively[4].

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Renal involvement was found in 60% to 80% of the children with SLE, often with acute rather than chronic symptoms. Eighty percent of SLE children were diagnosed with lupus nephritis (LN) at the time of their SLE diagnosis, and 90% of SLE patients developed LN that followed their diagnosis of SLE within two years[5].

Renal pathology by the 2003 International Society of Nephrology/Renal Pathology Society (ISN/RPS)[6] criteria are the key for diagnosis and evaluation of severity, disease progression, response of treatment and prognosis. From the Siriraj study[7], 162 Thai patients with an average age of 26 years, followed the same clinical course and pathology as the American and European patients. The most common type of LN is LN class IV which is 58.6%. Other LN classes II, V ,III, I are 17.9%, 12.9%,9.8% and 0.6% respectively. The rate of mortality and morbidity is higher in patients who have delayed diagnosis and treatment[8] .

LMN, Class V LN accounts for 18.5% of renal involvement in SLE. LMN has unique characteristics and an inconsistent clinical course and different outcomes from the others[9]. The current literature on pediatric LMN is limited. J.M. Esdaile et al[10] , found that 31% to 100% of LMN patients presented with nephrotic syndrome, defined as edema, microscopic hematuria and hypertension, but in laboratory investigation, serum complement and anti-dsDNA were normal[11]. However, children are different from adults and prone to have more severity. In addition, there is no clear understanding of factors which affect the clinical course, outcome and prognosis in pediatric LMN. One study in France[12] found the hemoglobin level to be one of the factors that affect the results of treatment and predict end stage renal disease. The USA defines creatinine at first presentation as a predictor for future creatinine.

By renal pathology, LMN is divided to two types. Most adult studies have reported a correlation between clinical manifestation, renal outcomes and patient mortality based on the type of LMN in which mixed-type LMN has more severity in initial renal manifestation and poorer outcomes. Mixed-type LMN patients have a higher rate of nephrotic syndrome, low serum complement 3 and 4, positive anti ds-DNA and trend of lower GFR than the pure type. Because disease expression in LMN is affected by environmental factors and varies between racial and ethnic groups, and in the study of 13 Chinese LMN children [13], mixed type had a better prognosis than in adults. In addition, studies in Thai LMN children is limited with less information in treatment regimen and the decision of immunosuppressive agents in LMN children.

The aims of the present study were to describe clinical features, common infectious complications, and outcomes of pediatric LMN in Thailand and determine the correlation with type of LMN classified by renal pathology or the treatment.

Definitions

The diagnosis of LMN was documented by renal biopsy. LN was classified by the 2003 ISN/RPS. Mixed-type LMN was classified by LN Class V with a proliferative lesion. Pure-type LMN (LN Class III, IV) was defined by LN Class V without a proliferative lesion[6].

Hypertension was defined by systolic and/or diastolic blood pressure more than the 95th percentile of blood pressure of the same age, height for age and sex.

GFR was calculated with Schwartz's formula.

Clinical evidence of nephritis required the presence of proteinuria.

Response of treatment in proteinuria was defined by a decrease in proteinuria more than 50% from the baseline. Renal remission was defined by UPCI ≤ 2 mg/mg. Complete response, Partial response and no response were defined by UPCI <0.2 mg/mg, 0.2 to 2.0 mg/mg and >2.0 mg/mg, respectively.

Statistical analysis

A retrospective cohort study was performed in patients with LMN who were diagnosed at Chiang Mai University from Jan 1, 2003 to Dec 31, 2012. Eligibility for inclusion in the present study was histopathological findings consistent with LMN. Inclusion criteria were all patients younger than 15 years of age diagnosed as LMN by the 2003 ISN/RPS classification and treated with prednisolone or any kind of immunosuppression. Other classes of LN and patients without a biopsy performed were excluded.

The demographic data initial presentation were recorded including: height, weight, blood pressure, presence or absence of edema, rash, serositis, arthritis and oral ulcer. Laboratory findings included BUN, serum creatinine, white blood cell (WBC) count, lymphocyte count, spot urine protein to creatinine ratio, hematuria (RBC >5 cells/HPF), were gathered.

Table 1. Clinical and Histological Characteristics at Presentation of LMN Patients

Data	All	Pure-Type LMN	Mixed-Type LMN	*p*-value
No. Patients	40	20	20	
Age (Mo) Median ± IQR	144.37±27.84	149.05±19.67	139.70±34.03	0.626
(Min-Max)	(60 to 180)	(108 to 180)	(60 to 177)	
Sex F/M, No. Patients	34/6	18/2	16/4	0.382
BUN (mg/dL)	23.07±18.09	16.25±11.36	29.90±21.09	0.013
Serum Creatinine (mg/dL)	0.86±0.76	0.83±0.97	0.88±0.49	0.192
GFR (cml/min/1.73 m^2)	110.26±38.85	120.23±41.62	100.30±33.99	0.110
Decreased GFR< 60ml/min/1.73 m^2 No. Patients, (%)	5 (12.5%)	3(15%)	2(10%)	0.637
Decreased GFR< 90ml/min/1.73 m^2 No. Patients, (%)	11 (27.5%)	4 (20%)	7 (35%)	0.294
UPCI (mg/mg)	5.82±5.35	5.02±4.17	6.62±6.32	0.620
Nephrotic Range Proteinuria No. Patients, (%)	28 (70%)	16 (80%)	12 (60%)	0.173
Without Extra Renal Manifestation No. Patients, (%)	11/40 (27.5%)	7/20 (35%)	4/20 (20%)	0.294
Hypertension, No. Patients, (%)	18/40 (45%)	5/20 (25%)	13/20 (65%)	0.012
Rash, No. Patients, (%)	23/40 (57.5%)	13/20 (65%)	10/20(50%)	0.343
Hb, Median ± IQR	10.42±2.18	10.12±2.23	10.72±2.15	0.341
Neutropenia, No. Patients, (%)	7/40 (17.5%)	2/20 (10%)	5/20 (25%)	0.217
Lymphopenia, No. Patients, (%)	3/40 (7.5%)	0/20 (0%)	3/20 (15%)	0.075
Edema, No. Patients, (%)	16/40 (40%)	7/20 (35%)	6/20 (30%)	0.738
Serositis, No. Patients, (%)	10/40 (25%)	4/20 (20%)	6/40 (15%)	0.471
Arthritis, No. Patients, (%)	10/40 (25%)	3/20 (15%)	7/20 (35%)	0.149
LE cell Positive, No. Patients, (%)	6/40 (15%)	0/20 (0%)	6/20 (30%)	0.009
ANA Positive, No. Patients, (%)	33/40 (82.5%)	17/20 (85%)	16/20 (80%)	0.681
PositiveAnti-dsDNA, No. Patients,(%)	9/40 (22.5%)	2/20 (10%)	7/20 (35%)	0.062
Low Complement3, No. Patients, (%)	22/39 (56.4%)	11/20 (55%)	11/19 (57.8%)	0.857

The serology finding include ANA, anti-dsDNA, complement 3 level and LE cell. The histopathological findings were obtained from the pathological report. For each patient, the treatment type of medication and immunosuppression were recorded.

Continuous variable data were summarized as median±IQR. Categorized variables were summarized as percentages. Mann Whitney U test and Chi-square proportion were used to investigate differences between two groups of patients. Kaplan-Meier survival curve was used to analyze urine protein to creatinine ratio and represented by log-rank test between pure and mixed LMN following two years of treatment in every visit. Results were considered statistically significant if the *p*-value was less than 0.05.

This retrospective chart review was approved by the Research Ethics Committee 4, Faculty of Medicine, Chiang Mai University on December 2, 2014

Results

From 2003 to 2012, the total number of 176 kidney biopsies were performed in children with SLE. Forty children (22%) were diagnosed as LMN by the 2003 ISN/RPS classification. 50% were pure-type LMN and Fifty percent were Mixed-type. The clinical data of the 40 patients with LMN are presented in Table 1. Their ages ranged from 5 to 15 years old with an average age at the time of diagnosis of 144.37±27.84 months. The age of pure-type LMN patients ranged from 9 to 15 years old and the age of mixed-type LMN

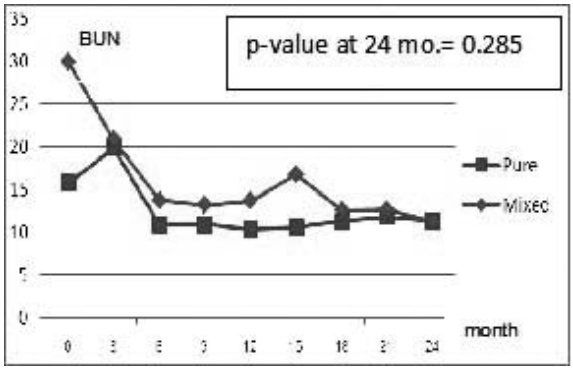

Fig. 1 Trends of Mean BUN Compared between Mixed and Pure-Type LMN.

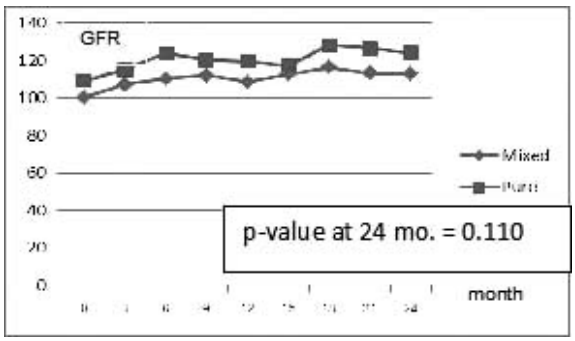

Fig. 2 Trends of Mean Creatinine Compared Between Mixed and Pure-Type LMN.

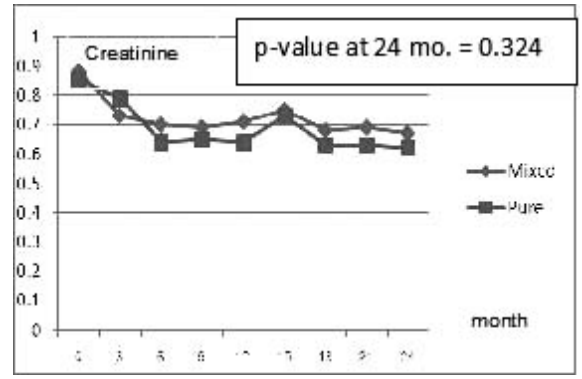

Fig. 3 Trends of Mean GFR Compared Between Mixed and Pure-Type LMN.

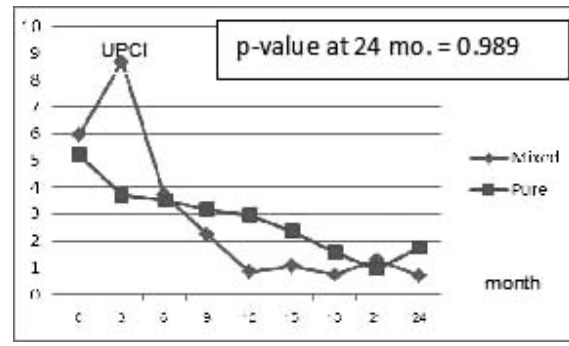

Fig. 4 Trends of Mean UPCI Comparing Mixed and Pure-Type LMN.

Table 2. Patient Characteristics at End of Membranous Lupus Nephritis Study

Data	Total	Pure	Mixed	*p*-value
Complete Response (No. Patients)	7/40 (17.5%)	5 (25%)	2 (10%)	
Partial Response (No. Patients)	22/40 (55%)	9 (45%)	13 (65%)	0.349
No Response (No. Patients)	11/40 (27.5%)	6 (30%)	5 (25%)	
BUN	15.40±18.82	17.9±25.71	12.9±7.28	0.849
Creatinine	0.745±0.76	0.82±1.06	0.66±0.18	0.077
GFR	121.78±31.11	127.89±37.26	115.68±22.80	0.110
UPCI	1.84±2.53	1.68±2.13	2.01±2.93	0.609

patients ranged from 5 to 14.7 years old. Ages were similar between both groups with a predominance of females. The female to male ratios were 18:2 and 16:4 in pure-type LMN and mixed-type LMN, respectively.

In LMN patients 72.5% had preserved kidney function, with 70% of LMN patients showing a nephrotic range proteinuria. Forty percent of LMN patients presented with nephrotic syndrome. Mixed-type LMN has a higher BUN and positive LE than pure-type LMN. Although the serum creatinine, GFR and UPCI comparison on both groups were not different. Compared to pure-type LMN patients, mixed-type LMN presented with higher rate of hypertension.

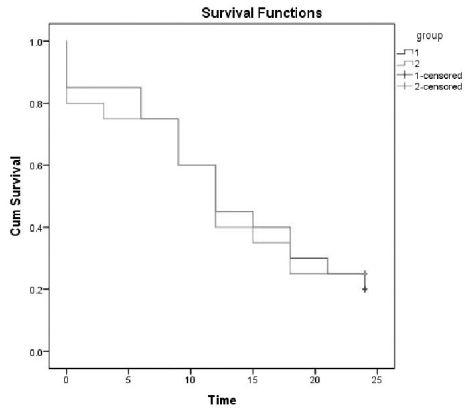

Fig. 5 Kaplan-Meyer Analysis of Time to Renal Remission Between Mixed-Type LMN (1) and Pure-Type LMN (2).

The initial clinical presentation other than renal manifestation of LMN included rash, hypertension, edema, serositis and arthritis which were 57.7%, 45%, 40%, 25% and 25% respectively. LMN patients presented 27.5% with abnormal renal manifestation without extra renal manifestation.

Clinical Course and Outcome of Patients

Currently, a uniform treatment for LMN at our institute has not been established. The choice of immunosuppressive drugs depended on patient's clinical presentations and severity of renal histopathology. All LMN patients received a renin–angiotensin system blocking agent and hydroxychloroquine except when contraindicated. All of the mixed-type LMN patients were

Table 3. Mean of BUN, Creatinine, GFR, UPCI Divided by Treatment Groups

Mean/Treatment	Group I	Group II	Group III	Group IV
No. patients	33	1	3	3
BUN	15.03±20.20	13	24±15.13	11.67±4.16
Creatinine	0.76±0.82	0.6	0.8±0.46	0.53±0.58
GFR	120.14±30.44	142	119.07±56.32	135.91±17.71
UPCI	1.87±2.52	0.4	3.33±4.06	0.63±0.46

Table 4. Complications of Treatment in LMN Patients

Treatment	Complication	Episode
Group I	Herpes Infection	5
	Pneumonia	2
	Lung Abscess	1
	Giardia Intestinalis	1
	Streptococcus pneumoniae Septicemia	1
	Cerebral Cysticercosis	1
	Salmonellosis	1
	Pulmonary Hemorrhage	1
	Hemorrhagic Cystitis	1
	SIADH	1
	Avascular Necrosis Of Hip	1
Group II	Herpes Zoster	1
	Pneumonia	1
Group III	Herpes Zoster	2
	Cellulitis	1
	Pulmonary Hemorrhage	1
	Avascular Necrosis Of Hip	1
Group IV	Nocardiasis	1

treated, as Class IV LN, with pulse cyclophosphamide and prednisolone as induction treatment and maintenance therapy with azathioprine and prednisolone. The pure-type LMN patients were treated with various immunosuppressive and prednisolone or prednisolone alone.

At the end of the study, after following LMN patients for two years, a trend of BUN, creatinine, GFR and UPCI was shown as Fig. 1-4. There were no statistically significant differences in GFR and proteinuria between both histological types.

After monitoring the degree of proteinuria for two years of treatment, two (10%) mixed-type LMN patients and five (25%) pure-type LMN patients achieved complete response. Thirteen (65%) mixed-type LMN and nine (45%) pure-type LMN patients achieved partial response. Five (25%) mixed-type LMN and six (30%) pure-type LMN patients did not respond to treatment.

In conclusion the renal outcomes after two years of treatment, all LMN patients had a normal GFR. There were no statistical significant differences in BUN, Cr, GFR and proteinuria between both histological types, as shown in Table 2.

Both types achieved renal remission after a median time of 12 months (IQR 7.64-16.36 mixed-type LMN, 8.78-15.22 pure-type LMN). Using the Kaplan-Meyer analysis (Fig 5), we calculated the mean time to renal remission in mixed type 13.50±1.92 months and pure type 12.45±1.36 months.

Regardless of renal histopathology, the type of immunosuppressive regimens were divided into four groups, 33 children received an induction therapy with cyclophosphamide and prednisolone and maintenance therapy with azathioprine and prednisolone (Group I). Only one patient received treatment with calcineurin inhibitor and prednisolone (Group II). Another three patients received treatment with mycophenolate mofetil and prednisolone (Group III). And the remaining patients received treatment with prednisolone alone (Group IV).

LMN patients in Group I had many infectious complications such as herpes zoster, lung abscess, giardia intestinalis, Streptococus pneumoniae septicemia, cerebral cysticercosis, bacterial pneumonia and salmonellosis, as shown in Table 4. The complications other than infection were hemorrhagic cystitis, SIADH and hypertensive encephalopathy. Similar to Group I, LMN patients in Group II had herpes zoster infection and bacterial pneumonia. LMN patient in Group III also had herpes infection, cellulitis, vasculitis, avascular necrosis of hip and multiple organ failure. The rest of the groups had nocardiasis. The patient with nocardiasis had concurrent active disease. None of LMN patients had leukopenia or lymphopenia at the time of infection.

Discussion

The present study reported LMN patients in a tertiary center in the northern Thailand. In studies regarding pediatric and adolescent lupus nephritis, based on the World Health Organization (WHO) classification, the prevalence of LMN was 9% similar to adult series. Apart from genetic, environmental factors and genders, ethnicity affects the incidence of disease. All of patients were Thai. Based on the ISN/RPS 2003 classification, the incidence of LMN in the present study (22%) was higher than previous reports. The incidence of pediatric LMN in Asia was 11-18%[5,13,14], higher than over all. Similarly, a retrospective study from Memphis, Tennessee showed a higher (30%) prevalence of LMN similarly[15].

The age of LMN patients ranged from 5 to15 years old. The age of pure-type LMN patients ranged from 9 to15 years old and the age of mixed-type LMN patients ranged from 5 to 14.7 years old, similar to Chinese patients[13]. Females are prominent in LMN. The female to male ratios were 18:2 and 16:4 in pure-type LMN and mixed-type LMN, respectively.

Similar to adult populations14, 30% of LMN patients in the present study had significant proteinuria but not more than nephrotic range proteinuria. In a previous study of pediatric LMN, nephrotic syndrome presented in 30.8% of LMN, similar to the adult population. However, in the present study, 70% of LMN patients presented with nephrotic range proteinuria and 60% of them had nephrotic syndrome at the onset. So that renal manifestations in children are more severe than adults. Furthermore, Asia populations may have a higher frequency of nephrotic syndrome in LMN. Initial presentation at diagnosis in a Chinese study showed that patients in pure-type LMN had nephrotic range proteinuria more than in mixed-type LMN but, in the present study, this was not significantly different between the two groups.

LMN typically presents with preserved kidney function. Seventy-two paint five present of LMN patients had normal GFR. When accompanied by

proliferative LN (Class III or Class IV LN) there is an increased likelihood of kidney dysfunction. In the present study, a number of patients with mixed-type LMN that had GFR below 90 ml/min/1.73m^2 was likely more than pure-type LMN. However, the initial GFR of both types of LMN were not significantly different.

Compared to pure-type LMN, patients with mixed-type LMN presented with higher number of hypertension and LE positive. This initial blood pressure, except the degree of proteinuria and GFR, can be used as a predictor of renal pathology.

Serologic manifestations of SLE in LMN patients such as hypocomplementemia or positive anti-double stranded DNA antibodies are often lacking. There were 22.5% of LMN patients who had positive anti-dsDNA. Mixed-typed LMN patients tended to have positive anti-dsDNA more than pure-type LMN but not significantly different. There were 56% of LMN patients that have hypocomplementemia (low complement 3) which was not different between both groups.

Extra renal manifestations of our patients were rash, edema, serositis and arthritis as 57.7%, 40%, 25% respectively, and 25% while Asian Indian patients presented with arthritis 72.7%, fever 71.7% and rash 54%. About 27.5% of LMN patients presented without extra renal manifestations of SLE[14]. With a normal serum complement and negative anti-ds DNA, LMN diagnosis should be done by renal pathology and positive ANA.

There was no uniform treatment for LMN at our institute. The choice of immunosuppressive drugs depended on patient's clinical presentations and severity of renal histopathology. The results from patients treated with the two-year immunosuppressive treatment presented by GFR and proteinuria. Children with LMN had a fair renal outcome overall. All of them had a preserved renal function. The GFR and proteinuria were not distinguished between both groups. However, the average of UPCI in mixed-type LMN was more than 2 mg/mg which represents nephrotic range proteinuria while the average of UPCI in pure-type LMN was below 2 mg/mg.

A number of patients who had resolved proteinuria after treatment in the present study were lower than in the Chinese study. 17.5% of LMN patients experienced complete recovery under treatment. 25% of pure-type LMN patients and 20% of mixed-type LMN patients in the present study were in complete remission, while 46% of pure-type LMN patient and 40% of mixed-type LMN patients in the Chinese study were in complete remission. However clinical remission was achieved in 72.5% of the 40 patients enrolled in the present study.

Several studies have demonstrated that infection is the main cause of morbidity and mortality in LN patients[16]. Herpes Zoster was common in pediatric LN patients. There was no significant difference in immunosuppressive regimens in patients with or without herpes infection. Bacterial infection especially Gram-negative bacteria is more common in Asian LMN patients. Some institutes recommend antibiotic prophylaxis such as cotrimoxazole. With similar renal outcomes, LMN treated with cyclophosphamide-based immunosuppressive had a number of complications such as hemorrhagic cystitis, SIADH, infertility and malignancy which cannot compare to other immunosuppressive drugs due to a small number of patients. Hence, the immunosuppressive with a low adverse effect may be considered as a preferable treatment in order to reduce the risk of potential side effects and complications. To diminish steroid side effect such as avascular necrosis of hip joint, cataract and bone disease, suggested treatment for pediatric LMN patients with non-nephrotic ranged proteinuria could be limited to a renin–angiotensin system blocking agent and hydroxychloroquine with the lowest dose of prednisone to control the disease. Vitamin D and calcium supplement should be given to every patient.

The limitations of our study were a retrospective gathering of data and a small number of patients enrolled in the present study due to the low incidence of LMN. There were possible confounding factors such as missing patient, the difference in LMN disease duration and various non-uniform treatments. The follow-up time in the present study was two years, consequently, there was no evaluation of long-term renal outcomes.

Conclusion

LMN in Thai pediatric patients presented with more frequency of nephrotic syndrome than adults. Hypertension at initial presentation can be a predictor of proliferative lesion in renal pathology. However, a proliferative lesion accompanied with LMN does not affect renal outcomes. With similar renal outcomes, the immunosuppressive with low adverse effects may be considered as a preferable treatment.

What is already known on this topic?

The incidence of pediatric LMN in Asia was 11-18%, higher than over all. Similarly, a retrospective study from Memphis, Tennessee showed a higher (30%) prevalence of LMN. The age of LMN patients ranged from 5 to15 years old. Females are prominent in LMN. Most adult studies have reported a correlation between clinical manifestation, renal outcomes and patient mortality based on the type of LMN in which mixed-type LMN has more severity in initial renal manifestation and poorer outcomes. Mixed-type LMN patients have a higher rate of nephrotic syndrome, low serum complement 3 and 4, positive anti ds-DNA and a trend of lower GFR than the pure type.

What is this study adds?

We have found the incidence of LMN in our study to be 22%. In LMN patients 72.5% had preserved kidney function with 70% of LMN patients showing a nephrotic range proteinuria. The initial clinical presentation other than renal manifestation of LMN included rash, hypertension, edema, serositis and arthritis. Compared to pure-type LMN, patients with mixed-type LMN presented with higher number of hypertension and LE positive. The initial high blood pressure, other than the degree of proteinuria and GFR, can be used as a predictor of renal pathology. The renal outcomes after two years of treatment, all LMN patients had a normal GFR. Mixed-type LMN and pure type LMN have same outcome. There were no statistical differences in proteinuria between both types. Both types achieved renal remission after a median time of 12 months. Herpes Zoster was common infectious complication in pediatric LN patients. With similar renal outcomes, LMN treated with cyclophosphamide-based immunosuppressive had a number of infectious complications. Hence, an immunosuppressive with lower side effects may be considered as a preferable treatment in order to reduce the risks of complications.

Potential conflicts of interest

None.

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การดำเนินโรค ผลการรักษา และภาวะแทรกซ้อนของไตอักเสบลูปัสชนิดที่ 5 ในเด็ก

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ภูมิหลัง: *โรคไตอักเสบลูปัสชนิดที่ 5 เป็นโรคที่พบได้ไม่บ่อยนักในเด็กเมื่อเปรียบเทียบโรคไตอักเสบลูปัสชนิดอื่น การศึกษาในกลุ่มผู้ป่วยเด็กมีน้อย ข้อมูลส่วนใหญ่ได้มาจากการศึกษาในผู้ใหญ่ ปัจจัยทางพันธุกรรม สิ่งแวดล้อมและเชื้อชาติ ส่งผลต่อการดำเนินโรคและผลการรักษาของโรคไตอักเสบลูปัสชนิดที่ 5เช่นเดียวกับโรคแพ้ภูมิตนเอง*

วัตถุประสงค์: *เพื่อศึกษาถึงอาการและอาการแสดง การดำเนินโรค ภาวะแทรกซ้อน และผลการรักษาผู้ป่วยเด็กไตอักเสบลูปัสชนิดที่ 5 ในประเทศไทย รวมถึงหาความสัมพันธ์ของการดำเนินโรค ผลการรักษาและภาวะแทรกซ้อนกับลักษณะทางพยาธิวิทยาโดยเปรียบเทียบระหว่างผู้ป่วยเด็กที่เป็นไตอักเสบลูปัสชนิดที่ 5 ชนิด pure type กับ mixed type*

วัสดุและวิธีการ: *การศึกษาทำโดยทบทวนประวัติย้อนหลังในผู้ป่วยเด็กไตอักเสบลูปัสชนิดที่ 5 ที่มีอายุน้อยกว่า 15 ปี ซึ่งได้รับการวินิจฉัยและรักษาที่คลินิกโรคไตในเด็กโรงพยาบาลมหาราชนครเชียงใหม่ตั้งแต่เดือนมกราคม พ.ศ. 2546 ถึง ธันวาคม พ.ศ. 2555 โดยจำแนกเป็น 2 กลุ่มตามลักษณะพยาธิวิทยาเป็นชนิด pure และ mixed type เพื่อเปรียบเทียบอาการ อาการแสดง ผลการรักษาและภาวะแทรกซ้อนเป็นระยะเวลา 2 ปี*

ผลการศึกษา: *ผู้ป่วยไตอักเสบลูปัสชนิดที่ 5 40 ราย จากลักษณะทางพยาธิวิทยาสามารถจำแนกได้เป็นกลุ่ม pure type ร้อยละ 50 และ mixed type ร้อยละ 50 ผู้ป่วยมีความผิดปกติของหลายระบบโดยมีอาการและอาการแสดงเมื่อแรกวินิจฉัยคือ ผื่นผิวหนังร้อยละ 57.7 ความดันโลหิตสูงร้อยละ 45 บวมร้อยละ 40 เยื่อหุ้มปอดหรือเยื่อหุ้มหัวใจอักเสบร้อยละ 25 และ ข้อเข่าอักเสบร้อยละ 25 กลุ่ม mixed type มีจำนวนผู้ป่วยที่มีความดันโลหิตสูงเมื่อแรกวินิจฉัย มากกว่า pure type รวมถึงมีค่ายูเรียในเลือดสูงและพบ LE cell มากกว่า ผู้ป่วยทุกรายได้รับการรักษาโดยยากดภูมิคุ้มกันเป็น cyclophosphamide, azathioprine, cyclosporine หรือ mycofenolate mofetil ร่วมกับยาสเตียรอยด์ หลังการติดตามผลการรักษาเป็นเวลา 2 ปี พบผู้ป่วยทุกรายมีอัตราการกรองของไตปกติ มีการตอบสนองด้านปริมาณโปรตีนรั่วทางปัสสาวะทั้งสิ้น 29 ราย (ร้อยละ 72.5) โดยตอบสนองอย่างสมบูรณ์จำนวน 7 ราย (ร้อยละ 17.5) ตอบสนองบางส่วน 22 ราย (ร้อยละ 55) ใช้เวลาเข้าสู่ระยะไตสงบทั้งสิ้น 12 เดือน ไม่พบความแตกต่างของผลการรักษาด้านอัตราการกรองของไตและปริมาณโปรตีนรั่วทางปัสสาวะอย่างมีนัยสำคัญระหว่างกลุ่ม mixed type และ pure type ผู้ป่วยที่ได้รับยากดภูมิคุ้มกันเป็น cyclophosphamide พบการติดเชื้อแทรกซ้อน ได้แก่ การติดเชื้องูสวัด,การติดเชื้อ Salmonella, ฝีในปอด, การติดเชื้อ Nocardia, การติดเชื้อ Giardia ที่ทางเดินอาหาร และการติดเชื้อซิสติเซอร์โคซิสในเนื้อสมอง ส่วนผลข้างเคียงของยาสเตียรอยด์คือภาวะกระดูกข้อสะโพกขาดเลือด*

สรุป: *ผู้ป่วย LMN ชนิด mixed type มักมาด้วยความดันโลหิตสูง ยูเรียในเลือดสูงและพบ LE cell มากกว่ากลุ่ม pure type ความดันโลหิตสูงแรกรับบ่งชี้ถึงลักษณะ proliferative lesion ที่พบในพยาธิวิทยาของไต อย่างไรก็ตามลักษณะ proliferative lesion ที่พบไม่มีผลต่อผลการรักษา จากผลการรักษาที่ไม่แตกต่างกันควรพิจารณายากดภูมิคุ้มกันชนิดที่มีภาวะแทรกซ้อนน้อยกว่าในการรักษา*
