

Pattern of lupus nephritis in Malaysia

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Summary

Between 1980-1986, 219 renal biopsies were performed on patients with lupus nephritis (LN) presenting at the General Hospital, Kuala Lumpur. There were 172 (78.5%) females and 47 (21.5%) males. The ethnic distribution of 48.4% Malays, 46.1% Chinese and 5.5% Indians reflected their proportional composition in the general population. Peak incidence (40.6%) of cases occurred in the third decade of life (20-29 group) followed by 26.5% and 20.1% in the second and fourth decades respectively. The median age was 24 for females and 27 for males. In both sexes, nephrotic syndrome was the commonest mode of presentation (62.2%) followed by proteinuria (20.5%). Acute oliguric renal failure occurred in 11 patients (5%) and 8 of these showed crescentic glomerulonephritis with more than 50% crescents.

The commonest histological picture was diffuse proliferative LN (WHO Stage IV-44.7%) which included 70% (19/27) of those with crescentic disease. This was followed by membranous LN (28.8%) of which 6 (all males) had crescentic disease. 27 (12.3%) of our patients had crescentic nephritis with a female to male distribution of 14:13, suggesting either more aggressive disease or delayed diagnosis in males.

Key words — Renal biopsies, lupus nephritis, nephrotic syndrome, proteinuria.

Introduction

Renal involvement occurs in 50-80% of patients with systemic lupus erythematosus (S.L.E.)^{1,2} It presents in many ways and variable histological patterns or combinations thereof are found on renal biopsy.³⁻⁷ The histopathologic class of lupus nephritis (LN) is highly correlated with prognosis and an aggressive therapeutic approach has resulted in marked reduction in mortality from renal failure.^{1,2,7-9} We have reviewed the 219 renal biopsies of patients with LN performed over the period 1980-1986 and report our preliminary data on their clinicopathologic characteristics.

Subjects and Method

For the purpose of this study, lupus nephritis is defined as a renal biopsy with features compatible with this diagnosis occurring in a patient with **either** 'classic' S.L.E. by the 1982 criteria of the American Rheumatism Association¹⁰ **or** with a positive LE cell **and/or** antinuclear factor **and/or** anti DNA antibodies.⁷ Except for 10 patients, all our patients had 'classic' SLE.

Two hundred and nineteen renal biopsies were performed in patients with LN presenting to the Department of Nephrology, General Hospital, Kuala Lumpur and to the Department of Medicine, Universiti Kebangsaan Malaysia over the period 1980–1986. The accompanying clinical data sheets were reviewed. Where data was insufficient, the case notes were also reviewed. This study cohort represented only about 70% of all those referred from throughout Malaysia with clinical LN but in whom renal biopsies were not always possible for various reasons. All renal biopsies were routinely examined by light microscopy and immunofluorescence. The histological classification was based on that recommended by the World Health Organisation (WHO – Table 3).¹¹ Crescentic LN is defined as the presence of crescents affecting 50% or more of the glomeruli present.

Results

Trend

There is a healthy progressive increase in the number of renal biopsies performed each year. (Table 1)

Table I
Breakdown of renal biopsies per year in each ethnic group

YEAR	MALAY	CHINESE	INDIAN	TOTAL
1980	8	7	1	16
1981	9	7	—	16
1982	9	20	2	31
1983	14	20	4	38
1984	15	22	1	38
1985	26	8	—	34
1986	25	17	4	46

Racial distribution (Table II)

There were 48.4% Malays, 46% Chinese and 5.5% of Indians in our series. This largely paralleled their proportional composition in the Malaysian population. (Table II)

Table II
Comparison between Ethnic Groups of the Population of Malaysia and Patients with Lupus Nephritis (1980 – 1986)

	MALAY (%)	CHINESE (%)	INDIAN (%)	OTHERS (%)
WEST MALAYSIA (CENSUS 1980) ¹⁹	55.4	33.8	10.2	0.6
EAST AND WEST MALAYSIA* (30 JUNE 1983) ²⁰	59.4	31.5	8.4	0.6
LUPUS NEPHRITIS	48.4	46.1	5.5	—

*Malay here includes Kadazans, Dayaks, etc.

Sex distribution

There were 172 (78.5%) females and 47 (21.5%) males i.e. an 8:2 ratio which was essentially similar to that found worldwide.^{12,13} The female to male ratio within the Malay and Chinese ethnic groups were similar. This ratio was 1:1 for the much smaller number of Indian patients.

Age

Peak incidence (40.6%) of LN occurred in the third decade of life. This was followed by 26.5% and 20.1% in the second and fourth decades respectively. This was similar to that of other series.^{1,2,7} (Fig. 1)

The median age was 24 years for females (range 2 – 59) and 27 for males (range 5 – 61). These were similar to those seen in our earlier review in 1983.^{12,13}

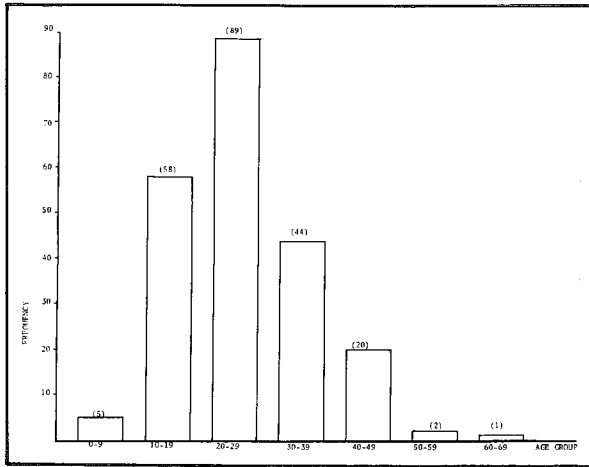


Figure 1
Lupus Nephritis
Distribution by Age – Group in Decades

Age and Sex

In the first decade of life, the female: male ratio was unity. In the fifth decade, this ratio had declined from 8:2 in the peak age groups thus affected to 3:1. Thereafter, it became unity again. This reflected the well-established fact of the influence of female sex hormones on S.L.E.¹

Clinical presentation

Nephrotic syndrome was the commonest mode of presentation (62.2%). This was followed by asymptomatic proteinuria (20.5%). Of special concern were the 11 patients (5%) – 7 males and 4 females – who presented with acute oliguric renal failure. 8 of these – 5 males and 3 females – showed crescentic lupus nephritis on biopsy. 4 of the 10 patients presenting with chronic renal failure also showed crescentic disease. (Fig. 2)

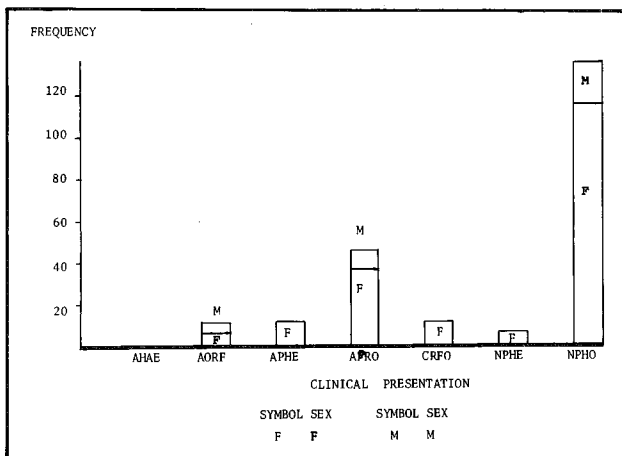


Figure 2
Lupus Nephritis
Clinical Presentation

AHAE – Asymptomatic Haematuria
AORF – Acute Oliguric renal failure
APHE – Asymptomatic Proteinuria +
Haematuria
APRO – Asymptomatic Proteinuria
CRFO – Chronic Renal Failure
NPHE – Nephritis Syndrome
NPHO – Nephrotic syndrome

Histological class

Overall, diffuse proliferative glomerulonephritis was the most common histological pattern seen (44.7%). This included 70% (19/27) of those with crescentic disease. This was followed by membranous lupus nephritis (28.8%). However membranous was the more common histological diagnosis in the male subpopulation (18/47 patients) and 6 of these had crescentic disease. (Fig. 3, Table III)

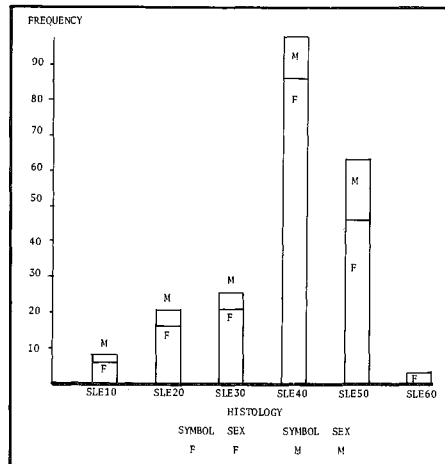


Figure 3

Lupus Nephritis – Histological Class (WHO)

SLE 10 (I) – Nil/Minimal

SLE 20 (II) – Mesangial Proliferative

SLE 30 (III) – Focal Segmental Proliferative

SLE 40 (IV) – Diffuse Proliferative

SLE 50 (V) – Membranous

*SLE 60 (VI) – Sclerotic

*Not classified by WHO

Table III

Comparison of Histological Pattern of Lupus Nephritis between G.H.K.L., U.H.K.L. and combined foreign series

W.H.O. Class	Histology	G.H.K.L. (1976 – 1982)	G.H.K.L. (1980 – 1986)	U.H.K.L. (1975 – 1985)	Others*
(No. of Biopsies)		65	219	288	340
I	Minimal	—	3.2	} 8%	6.2
II	Mesangial	—	9.6		18.8
III	Focal (Crescentic)	6%	12.3% (1%)	2.1%	15.3%
IV	Diffuse (Crescentic)	77%	44.7% (8.7%)	68.0% 4.2%	44.4%
V	Membranous (Crescentic)	17%	28.8% (2.7%)	10.8%	15.3%
VI	Sclerotic (Resolved)	—	1.4%	4.5%	—
		—	—	2.8%	—

G.H.K.L. General Hospital Kuala Lumpur

U.H.K.L. University Hospital Kuala Lumpur

Others* Taken from reference (17) for common basis for comparison
(By kind permission of Prof. F. Wang)

Crescentic LN

A total of 27 patients (12.3%) had crescentic LN with an equal female to male distribution (14:13). However, crescents affecting glomeruli in varying proportions up to 40% were not an uncommon finding, especially amongst the diffuse proliferative and membranous classes.

Discussion

Studies elsewhere point to a higher prevalence and more severe disease in Blacks and Orientals as compared with Caucasians and in those from proper socioeconomic background.^{14,15} Amongst Orientals, it is debatable whether there is a true predisposition to SLE by one or other ethnic groups as suggested by Feng¹⁵ and Frank.¹⁶ Their reports did indeed colour our earlier impression that the Chinese appeared to be more susceptible to SLE and therefore LN. However, Tables I & II show that in our series, both the Malays and Chinese are proportionately affected as are the Indians. The earlier apparent difference can be examined by one or more of the following reasons:—

1. Prior to the mid-1970's the Malays were mainly located in the rural areas ie. geographically disadvantaged.
2. Until 1976, renal biopsy facilities were only available at one centre in Malaysia i.e. the University Hospital.
3. Lack of physician awareness of the usefulness of renal biopsy in LN.
4. Patient refusal for referral especially amongst the Malays until recently.
5. Ethnic preference for traditional medication — again more prevalent amongst the Malays.

Table III shows that our overall pattern of LN is surprisingly similar to that of the 5 combined foreign series with the exception of the high incidence of both membranous LN and crescentic disease. We are also intrigued that the pattern we see differs significantly from that seen in our earlier review and that at the University Hospital. This paradox can be explained by the recent wider acceptance of renal biopsy by physicians and patients alike, especially the Malays. Due to our local general hospital set-up, there is also better racial representation by our series.

We have earlier shown that patients with LN have usually had urine abnormalities or nonresponsive nephrotic syndrome for an average of 9.37 months prior to referral for renal biopsy. As our centre also offers a comprehensive renal dialysis — transplantation programme, patients with renal impairment are perhaps preferentially referred, thereby accounting for the high incidence of crescentic and membranous classes of LN.

In recent years, we are happy to note that SLE patients with urine abnormalities are being referred much earlier and this is the single most important factor responsible for the histopathological difference seen between the current series (1980-1986) and our earlier experience (1976-1982) (Table III).

Conclusion

Our series of biopsy-proven LN is highly representative of its incidence in the Malaysian populace. The 3 major ethnic groups are proportionately affected. Nephrotic syndrome followed by asymptomatic proteinuria are the commonest clinical presentations. LN presenting as acute oliguric renal failure augurs for a poor prognosis and crescentic transformation is highly likely. LN in males tends to be diagnosed very belatedly.

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