

CHAPTER 3

Secondary Glomerulonephritis

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3.1 Introduction

This chapter covers the main secondary glomerulonephritis that were reported to the MRRB from the years 2005-2008.

Lupus nephritis is the commonest secondary glomerulonephritis in adult contributing to almost 90% of all total secondary glomerulonephritis in Malaysia. Diabetic nephropathy contributed about 10%. Other causes of secondary glomerulonephritis is relatively uncommon (Table 3.1).

Table 3.1: Causes of secondary glomerulonephritis in adult, 2005-2008

| Type of secondary GN | 2005 | | 2006 | | 2007 | | 2008 | | Total | |
|------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|
| | n | % | n | % | n | % | n | % | n | % |
| Lupus nephritis | 238 | 94 | 274 | 87 | 269 | 83 | 272 | 83 | 1053 | 86 |
| Diabetic nephropathy | 8 | 3 | 27 | 9 | 40 | 12 | 37 | 10 | 112 | 9 |
| Post infectious GN | 5 | 2 | 4 | 1 | 8 | 2 | 5 | 1 | 22 | 2 |
| Systemic vasculitis | 1 | 0 | 7 | 2 | 2 | 0 | 2 | 1 | 8 | 1 |
| Unknown-Secondary | 0 | 0 | 0 | 0 | 3 | 1 | 5 | 1 | 8 | 1 |
| Other infection | 0 | 0 | 1 | 0 | 1 | 0 | 5 | 1 | 7 | 1 |
| HUS/TTP* | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 5 | 0 |
| Multiple myeloma | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 0 | 4 | 0 |
| Malignancy | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 |
| Light/heavy chain disease | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 |
| Henoch Schoenlein Purpura | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Amyloidosis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Polyarteritis nodosa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Anti-GBM antibody disease | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Immunotactoid glomerulopathy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 253 | 100 | 314 | 100 | 327 | 100 | 334 | 100 | 1228 | 100 |

* Hemolytic uraemic syndrome/Thrombotic thrombocytopenic purpura

3.2: Lupus Nephritis

3.2.1: Introduction

Lupus nephritis is the commonest secondary glomerulonephritis in Malaysia. This section dealt with lupus nephritis in adult population (defined as more than 15 years of age).

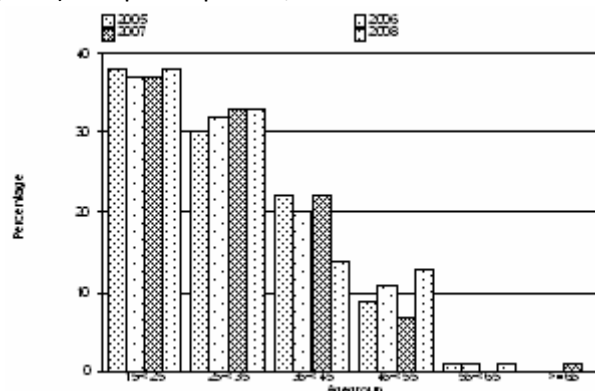
3.2.2: Patient population and characteristics

In the period of 1st January 2005 and 31st December 2008, there was a total of 1053 biopsy-proven lupus nephritis in 1004 patients were reported.

3.2.2.1: Age at time of biopsy

The mean age of adult patients with lupus nephritis at the time of biopsy was 30.3 ± 10.4 years (range: 15-70.4 years). The most predominant age group was between 15 to 25 years old, which accounted for 38% of cases. The onset of lupus above the age of 45 was uncommon and constituted about 10% of cases.

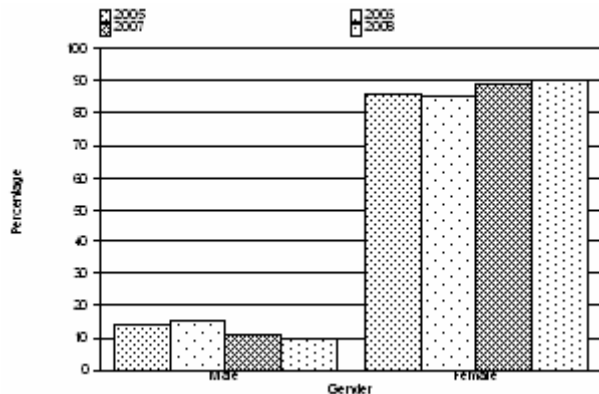
Figure 3.2.2.1: Age group at time of biopsy (years) in lupus nephritis, 2005-2008.



3.2.2.2: Gender distribution

Lupus nephritis predominantly affects female with female: male ratio of 6.9:1.

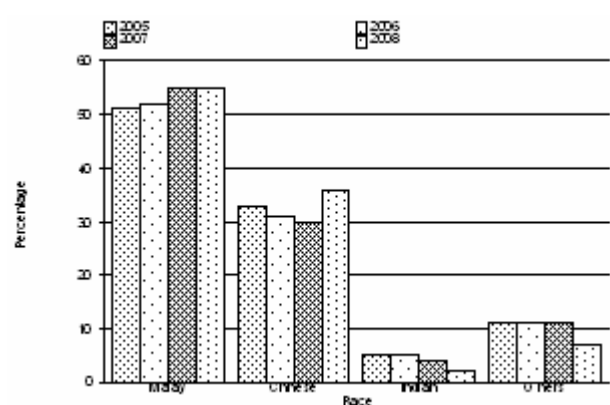
Figure 3.2.2.2: Gender distribution in lupus nephritis, 2005-2008



3.2.2.3: Racial prevalence

Fifty-three percent of patients with lupus nephritis were Malays, 32% were Chinese, 4% were Indian and 10% were of other races (mainly indigenous population of Malaysia).

Figure 3.2.2.3: Racial distribution in lupus nephritis, 2005-2008



3.2.3: Clinical presentation

In adult patients with lupus nephritis, 38% presented with urine abnormalities, 11% with nephritic syndrome, 30% with nephrotic syndrome and 9% presented with a combination of nephritic and nephrotic picture. There has been an increased in incidence in the latter presentation in recent years. Data were missing in about 12% of cases (Table 3.2.3). At the time of presentation, 30-40 % had impaired renal function (defined by e-GFR by modified MDRD of less than 60 ml/min/1.72m²). The incidence of hypertension increased almost two fold from 2007 to 2008 (Figure 3.2.3 (a) & (b)).

Table 3.2.3: Clinical presentation by year in lupus nephritis, 2005-2008

| Clinical Presentation | 2005 | | 2006 | | 2007 | | 2008 | | Total | |
|------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|
| | n | % | n | % | n | % | n | % | n | % |
| Urine abnormality | 98 | 41 | 114 | 42 | 97 | 36 | 92 | 34 | 401 | 38 |
| Nephritic syndrome | 26 | 11 | 27 | 10 | 29 | 11 | 29 | 11 | 111 | 11 |
| Nephrotic syndrome | 66 | 28 | 76 | 28 | 89 | 33 | 90 | 33 | 321 | 30 |
| Nephrotic-nephritic syndrome | 9 | 4 | 15 | 5 | 26 | 10 | 45 | 17 | 95 | 9 |
| Missing | 39 | 16 | 42 | 15 | 28 | 10 | 16 | 6 | 125 | 12 |
| Total | 238 | 100 | 274 | 100 | 269 | 100 | 272 | 100 | 1053 | 100 |

Figure 3.2.3 (a): Hypertension by year in lupus nephritis, 2005-2008

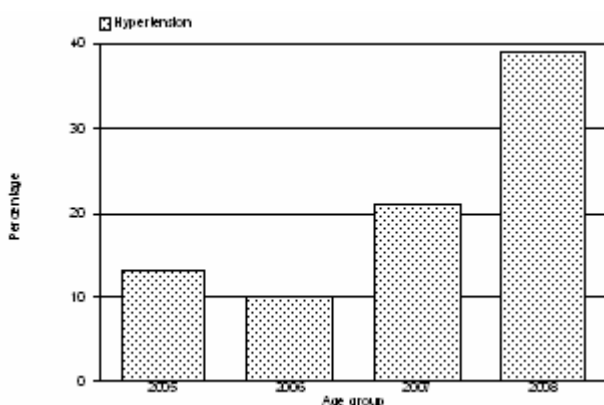
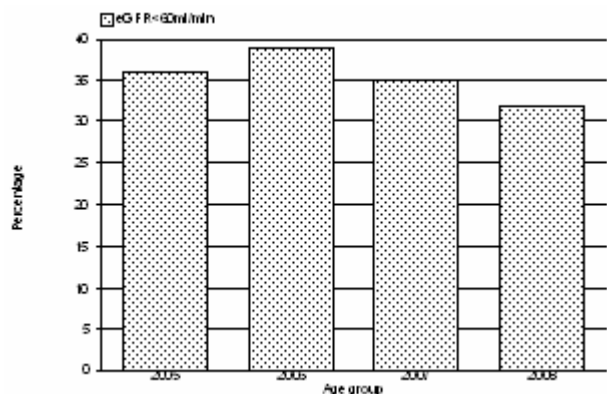


Figure 3.2.3 (b) Impaired renal function by year



3.2.3.1: Clinical Presentation by age

Urine abnormalities were the commonest clinical presentation of lupus nephritis in all age group. This was followed by nephrotic syndrome (Table & Figure 3.2.3.1(a)). The prevalence of hypertension was between 20-25% across all age groups (Figure 3.2.3.1(b)). The prevalence of impaired kidney function (e-GFR of < 60ml/min/1.73 m²) was higher in older age groups (Figure 3.2.3.1(c)).

Table 3.2.3.1(a): Clinical presentation by age group, 2005-2008

| Age group (years) | 15- <25 | | 25-<35 | | 35-<45 | | 45-<55 | | 55-<65 | | ≥65 | | Total | |
|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|----------|------------|----------|------------|-------------|------------|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Urine abnormality | 137 | 35 | 133 | 39 | 86 | 42 | 38 | 37 | 5 | 72 | 2 | 50 | 401 | 38 |
| Nephritic syndrome | 42 | 10 | 41 | 12 | 20 | 10 | 6 | 6 | 1 | 14 | 1 | 25 | 111 | 11 |
| Nephrotic syndrome | 122 | 31 | 107 | 32 | 60 | 29 | 31 | 30 | 1 | 14 | 0 | 0 | 321 | 30 |
| Nephrotic-nephritic | 36 | 9 | 31 | 9 | 16 | 8 | 12 | 11 | 0 | 0 | 0 | 0 | 95 | 9 |
| Missing | 58 | 15 | 27 | 8 | 22 | 11 | 17 | 16 | 0 | 0 | 1 | 25 | 125 | 12 |
| TOTAL | 395 | 100 | 339 | 100 | 204 | 100 | 104 | 100 | 7 | 100 | 4 | 100 | 1053 | 100 |

Figure 3.2.3.1(a): Clinical presentation by age group, 2005-2008

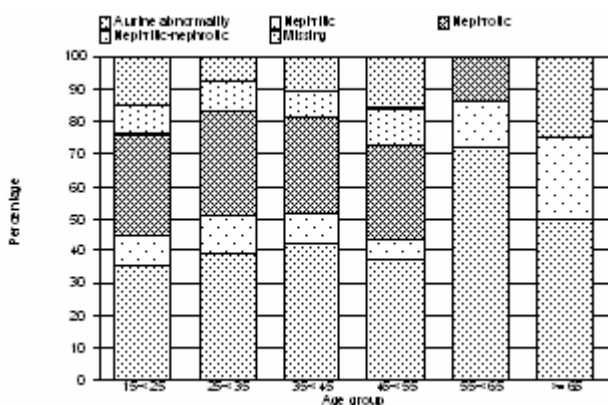


Figure 3.2.3.1(b): Hypertension by age group 2005-2008

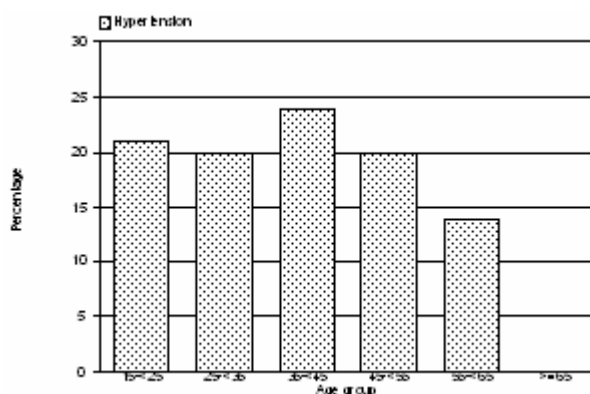
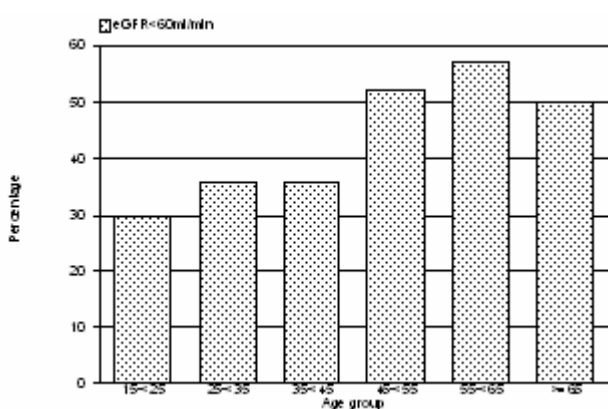


Figure 3.2.3.1(c): Impaired renal function by age group, 2005-2008



3.2.3.2: Clinical presentation by gender

There were no difference in the clinical presentation and proportion of patients with impaired renal function between the two genders (Figure 3.2.3.2 (a & c)). However, the prevalence of hypertension was higher in female (22%) than male (17%) (Figure 3.2.3.2 (b)).

Figure 3.2.3.2 (a): Clinical presentation by gender, 2005-2008.

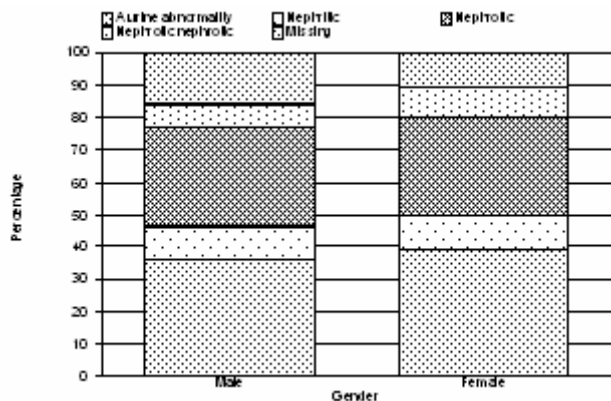


Figure 3.2.3.2(b): Hypertension by gender, 2005-2008.

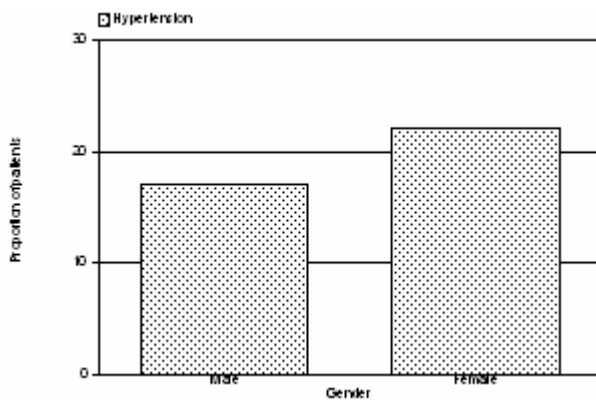
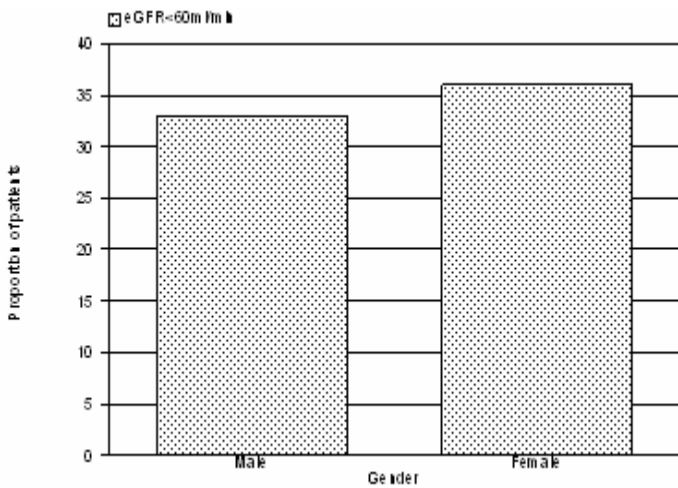


Figure 3.2.3.2(c): Impaired renal function by gender, 2005-2008.



3.2.3.3: Clinical Presentation by histopathology.

There were no clear correlation between histopathological findings and clinical presentation. However, class IV, class IV+V were more likely to present with symptomatic renal disease, with 57% had symptomatic renal disease at presentation. In comparison, those with class II, only 39% had symptomatic renal disease (Table & Figure 3.2.3.3 (a)). The prevalence of hypertension was higher in class IV & IV+V lupus nephritis (Figure 3.2.3.3(b)). The prevalence of impaired kidney function correlated with histopathological findings. The proportion of patients with e-GFR < 60 ml/min/1.72 m² were 44%, 22%, 25% and 9% in class IV or IV+V, class III or V+III, class V and class II respectively (Figure 3.2.3.3(c)).

Table 3.2.3.3 (a): Clinical presentation by histopathology in lupus nephritis, 2005-2008

| Clinical Presentations | I | | II | | III & V+III | | IV & IV+V | | V & V+II | | VI | | Total | |
|------------------------------|----------|------------|-----------|------------|-------------|------------|------------|------------|------------|------------|----------|------------|-------------|------------|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Urine abnormality | 3 | 60 | 52 | 58 | 94 | 46 | 188 | 30 | 54 | 46 | 3 | 60 | 394 | 38 |
| Nephritic syndrome | 0 | 0 | 11 | 12 | 22 | 11 | 71 | 12 | 5 | 4 | 0 | 0 | 109 | 11 |
| Nephrotic syndrome | 2 | 40 | 17 | 19 | 55 | 27 | 206 | 33 | 39 | 33 | 1 | 20 | 320 | 31 |
| Nephrotic–nephritic syndrome | 0 | 0 | 7 | 8 | 9 | 4 | 71 | 12 | 5 | 4 | 0 | 0 | 92 | 9 |
| Missing | 0 | 0 | 3 | 3 | 25 | 12 | 77 | 13 | 14 | 13 | 1 | 20 | 120 | 11 |
| Total | 5 | 100 | 90 | 100 | 205 | 100 | 613 | 100 | 117 | 100 | 5 | 100 | 1035 | 100 |

* 18 cases are missing on lupus subclass

Figure 3.2.3.3 (a): Clinical presentation by histopathology in lupus nephritis, 2005-2008

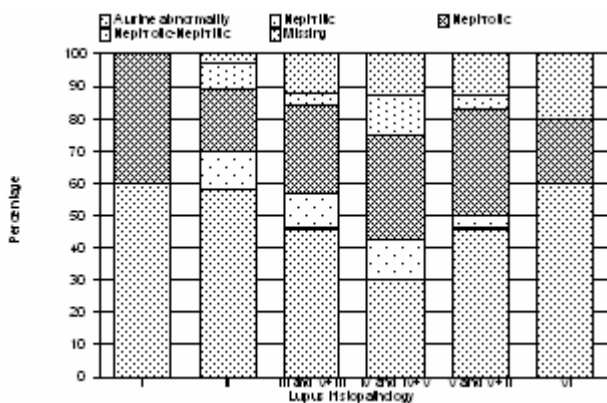


Figure 3.2.3.3(b) Hypertension by histopathology in lupus nephritis, 2005-2008

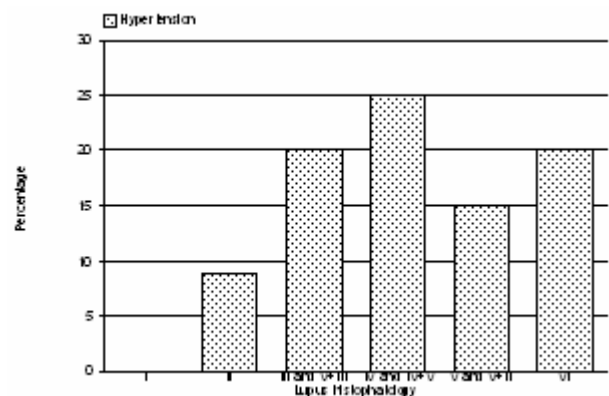
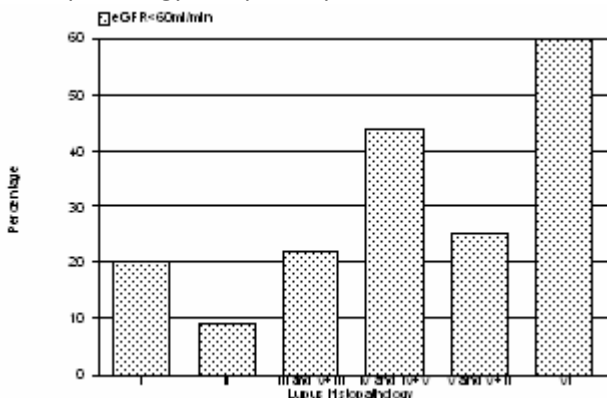


Figure 3.2.3.3(c): Impaired renal function by histopathology in lupus nephritis, 2005-2008



3.2.4: Renal function at presentation.

Thirty-six percent of all patients have impaired renal function (defined as e-GFR < 60ml/min/1.73 m²) at the time of presentation. Five percent had e-GFR < than 15 ml/min (Table 3.2.4.1).

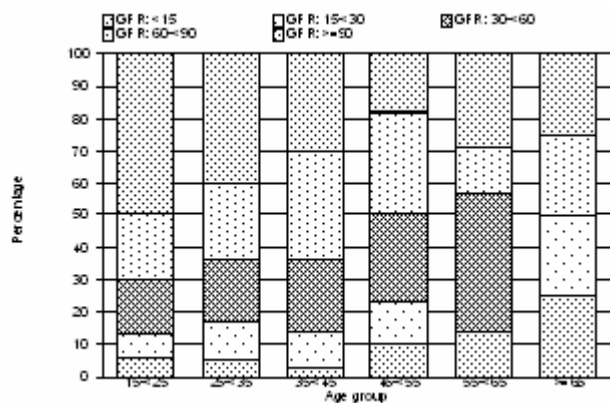
3.2.4.1: Renal function at presentation by age group

The frequency of impaired renal function increases after the age of 35. Between 36-39% has eGFR less than 60 ml/min below the age of 35 and rises to 43% in the age group of 35 to 45 and 53% in age group of 45 to 55 (Table & Figure 3.2.4.1).

Table 3.2.4.1: Renal function by age group in lupus nephritis, 2005-2008

| e-GFR (ml/min/1.73m ²) | 15 ≤ 25 | | 25 ≤ 35 | | 35 ≤ 45 | | 45 ≤ 55 | | 55 ≤ 65 | | ≥65 | | Total | |
|---------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|----------|------------|----------|------------|-------------|------------|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| <15 | 22 | 6 | 17 | 5 | 6 | 3 | 10 | 10 | 1 | 14 | 1 | 25 | 57 | 5 |
| 15 to < 30 | 29 | 7 | 40 | 12 | 22 | 11 | 13 | 13 | 0 | 0 | 1 | 25 | 105 | 10 |
| 30 to < 60 | 67 | 17 | 65 | 19 | 45 | 22 | 30 | 28 | 3 | 43 | 0 | 0 | 210 | 21 |
| 60 to < 90 | 81 | 21 | 82 | 24 | 69 | 34 | 32 | 31 | 1 | 14 | 1 | 25 | 266 | 25 |
| > 90 | 196 | 49 | 135 | 40 | 62 | 30 | 19 | 18 | 2 | 29 | 1 | 25 | 415 | 39 |
| Total | 395 | 100 | 339 | 100 | 204 | 100 | 104 | 100 | 7 | 100 | 4 | 100 | 1053 | 100 |

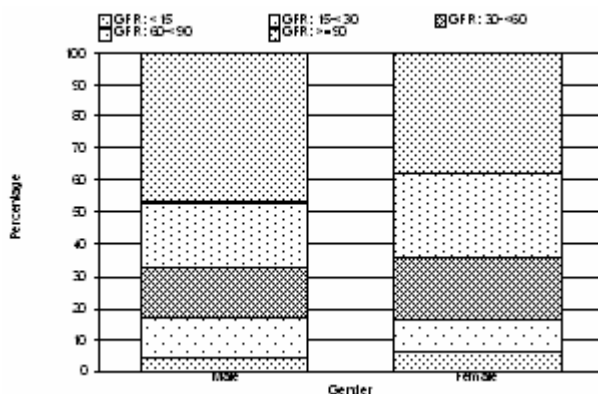
Figure 3.2.4.1: Renal function by age group in lupus nephritis, 2005-2008



3.2.4.2: Renal function at presentation by gender

There were no differences in the renal function at presentation between the two genders (Figure 3.2.4.2).

Figure 3.2.4.2: Renal function at presentation by gender in lupus nephritis, 2005-2008



3.2.4.3: Renal function at presentation by histopathology

In the proliferative lupus nephritis (class III, IV, V+III and V+IV), class IV and V+IV have worse renal function than class III or class V+III (Table 3.2.4.3).

Table 3.2.4.3: Renal function at presentation in lupus nephritis by histopathology, 2005-2008

| e-GFR (ml/min/1.73m ²) | I | | II | | III and V+III | | IV and IV+V | | V and V+II | | VI | | Total | |
|---------------------------------------|----------|------------|-----------|------------|------------------|------------|----------------|------------|------------|------------|----------|------------|-------------|------------|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| <15 | 0 | 0 | 0 | 0 | 5 | 2 | 39 | 6 | 3 | 3 | 1 | 20 | 48 | 5 |
| 15 to <30 | 0 | 0 | 2 | 2 | 11 | 5 | 80 | 13 | 9 | 8 | 1 | 20 | 103 | 10 |
| 30 to <60 | 1 | 20 | 6 | 7 | 30 | 15 | 155 | 25 | 16 | 14 | 1 | 20 | 209 | 20 |
| 60 to <90 | 0 | 0 | 28 | 31 | 60 | 30 | 146 | 25 | 30 | 25 | 1 | 20 | 265 | 26 |
| > 90 | 4 | 80 | 54 | 60 | 99 | 48 | 193 | 31 | 59 | 50 | 1 | 20 | 410 | 39 |
| Total | 5 | 100 | 90 | 100 | 205 | 100 | 613 | 100 | 117 | 100 | 5 | 100 | 1035 | 100 |

18 cases are missing on lupus subclass

3.2.5: Histopathological diagnosis

There were a total of 1053 adult biopsies with a diagnosis of lupus nephritis. Data on the lupus subclass were incomplete in 18 cases. The distribution of histopathological class based on WHO or ISN/RPS classification is summarized in table 3.2.5. Class IV and IV+V are the predominant biopsy findings accounting for 59% of patients diagnosed with lupus nephritis, followed by class III and III+V which contributes about 20%. There were very few class I and VI lupus nephritis reported to the registry.

Table 3.2.5.: Histopathological diagnosis in lupus nephritis by year, 2005-2008

| WHO or ISN/ RPS classification | 2005 | | 2006 | | 2007 | | 2008 | | Total | |
|-----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|
| | n | % | n | % | n | % | n | % | n | % |
| Class I | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 1 | 5 | 0 |
| Class II | 27 | 12 | 14 | 5 | 29 | 11 | 20 | 7 | 90 | 9 |
| Class III and V+III | 38 | 16 | 59 | 22 | 51 | 19 | 57 | 21 | 205 | 20 |
| Class IV and IV+V | 135 | 58 | 165 | 62 | 149 | 56 | 164 | 61 | 613 | 59 |
| Class V and V+II | 32 | 14 | 30 | 11 | 32 | 13 | 23 | 9 | 117 | 12 |
| Class VI | 1 | 0 | 0 | 0 | 2 | 1 | 2 | 1 | 5 | 0 |
| Total | 234 | 100 | 269 | 100 | 264 | 100 | 268 | 100 | 1035 | 100 |

* 18 cases are missing on lupus subclass

3.2.5.1: Histopathological diagnosis by age

In adults, class IV or V+IV were the most predominant lesion in all age groups. However, the frequency of class IV and IV+V were less with increasing age (Table 3.2.5.1).

Table 3.2.5.1: Histopathological diagnosis by age group in lupus nephritis, 2005-2008

| Histopathology | 15 to <25 | | 25 to <35 | | 35 to <45 | | 45 to <55 | | 55 to <65 | | ≥65 | | Total | |
|--------------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|------------|----------|------------|-------------|------------|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Class I | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 13 | 0 | 0 | 5 | 0 |
| Class II | 38 | 10 | 31 | 9 | 15 | 7 | 6 | 6 | 0 | 0 | 0 | 0 | 90 | 9 |
| Class III or V+III | 72 | 19 | 74 | 22 | 40 | 20 | 16 | 16 | 2 | 29 | 1 | 33 | 205 | 20 |
| Class IV or IV+V | 237 | 60 | 202 | 60 | 120 | 59 | 50 | 50 | 2 | 29 | 2 | 67 | 613 | 60 |
| Class V and V+II | 34 | 9 | 29 | 9 | 25 | 13 | 27 | 27 | 2 | 29 | 0 | 0 | 117 | 11 |
| Class VI | 2 | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Total | 386 | 100 | 337 | 100 | 202 | 100 | 100 | 100 | 7 | 100 | 3 | 100 | 1035 | 100 |

* 18 cases are missing on lupus subclass

3.2.5.2: Histopathological diagnosis by gender

Class IV and IV+V was the commonest histopathological finding in both genders. Class IV or IV+V occurred in higher frequency in females, whereas class V occurred in higher frequency in males (Table 3.2.5.2).

Table 3.2.5.2: Histopathological diagnosis by gender in lupus nephritis, 2005-2008

| Histopathology | Male | | Female | | Total | |
|--------------------|------------|------------|------------|------------|-------------|------------|
| | n | % | n | % | n | % |
| Class I | 1 | 1 | 4 | 0 | 5 | 0 |
| Class II | 9 | 7 | 81 | 9 | 90 | 9 |
| Class III or V+III | 31 | 22 | 174 | 19 | 205 | 20 |
| Class IV or IV+V | 69 | 52 | 544 | 60 | 613 | 59 |
| Class V or V+II | 22 | 17 | 95 | 12 | 117 | 12 |
| Class VI | 1 | 1 | 4 | 0 | 5 | 0 |
| Total | 133 | 100 | 902 | 100 | 1035 | 100 |

*18 cases are missing on lupus subclass

3.2.5.3: Histopathological diagnosis by clinical presentation

Urine abnormalities were the most common clinical presentation, followed by nephrotic syndrome. Seventy-seven percent with nephritic-nephrotic, 64% with nephrotic syndrome and 63% with nephritic syndrome had class IV or class V+IV lupus nephritis. However, 48% with urine abnormalities alone also had class IV or class V+IV (Table 3.2.5.3).

Table 3.2.5.3: Histopathological diagnosis by clinical presentation in lupus nephritis, 2005-2008

| Histopathology | Urine abnormality | | Nephritic | | Nephrotic | | Nephritic-nephrotic | | Missing | | Total | |
|-----------------|-------------------|------------|------------|------------|------------|------------|---------------------|------------|------------|------------|-------------|------------|
| | n | % | n | % | n | % | n | % | n | % | n | % |
| I | 3 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 5 | 0 |
| II | 52 | 13 | 11 | 10 | 17 | 6 | 7 | 8 | 3 | 3 | 90 | 9 |
| III and III + V | 94 | 23 | 22 | 20 | 55 | 17 | 9 | 10 | 25 | 20 | 205 | 20 |
| IV and IV+V | 188 | 48 | 71 | 65 | 206 | 64 | 71 | 77 | 77 | 64 | 613 | 59 |
| V and V+II | 54 | 14 | 5 | 5 | 39 | 12 | 5 | 5 | 14 | 12 | 117 | 12 |
| Class VI | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 5 | 0 |
| Total | 394 | 100 | 109 | 100 | 320 | 100 | 92 | 100 | 120 | 100 | 1035 | 100 |

*18 cases are missing on lupus subclass

3.2.6: Extra-renal involvement

3.2.6.1: American Rheumatological Association (ARA) criteria in lupus nephritis.

About 2/3 of cases of lupus nephritis fulfilled 4 or more ARA criteria at the time of presentation (Table 3.2.6.1).

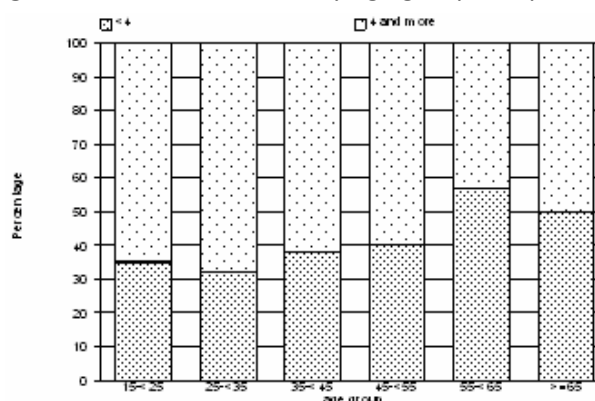
Table 3.2.6.1: ARA criteria in lupus nephritis, 2005-2008

| Number of ARA criteria | 2005 | | 2006 | | 2007 | | 2008 | | Total | |
|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|
| | n | % | n | % | n | % | n | % | n | % |
| <4 | 81 | 34 | 93 | 34 | 100 | 37 | 97 | 36 | 371 | 35 |
| 4 and more | 157 | 66 | 181 | 66 | 169 | 63 | 175 | 64 | 682 | 65 |
| Total | 238 | 100 | 274 | 100 | 269 | 100 | 272 | 100 | 1053 | 100 |

3.2.6.2: ARA criteria in lupus nephritis by age

In patients less than 55 years of age, about 2/3 satisfied the ARA criteria for the diagnosis of SLE. There were only 11 patients aged 55 years and above (Figure 3.2.6.2).

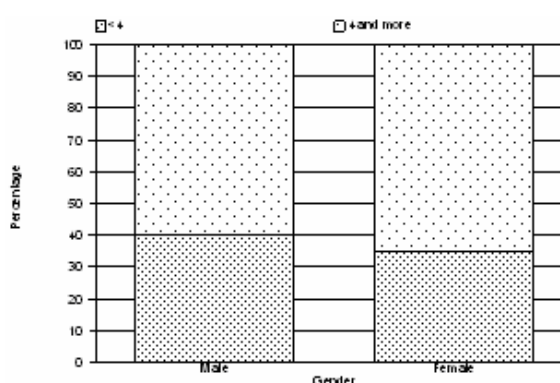
Figure 3.2.6.2: ARA criteria by age group in lupus



3.2.6.3: ARA criteria by gender

The proportion of patients that fulfilled 4 or more ARA criteria at the time of presentation is slightly more in female than male (65% versus 60%) (Figure 3.2.6.3).

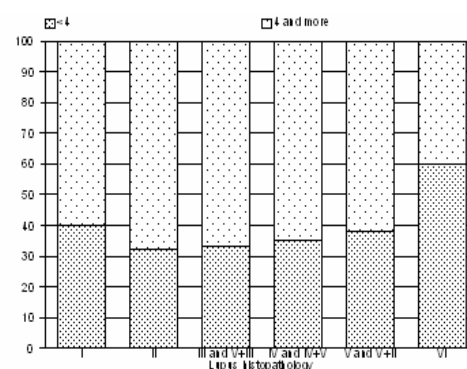
Figure 3.2.6.3: ARA criteria by gender in lupus



3.2.6.4: ARA criteria by histopathological findings

Fulfilling ARA criteria does not predict the severity of renal lesion in lupus nephritis.

Figure 3.2.6.4: ARA criteria by histopathology in lupus



Figure

3.2.6.5: Extra-renal involvement

In patients with lupus nephritis, 56% had mucocutaneous involvement, 35% had arthritis, 9% had serositis, 12% had cerebral involvements and 43% had haematological involvements (Table 3.2.6.5(a)). Mucocutaneous involvement, serositis and especially arthritis were more common in females than in males. Neurological and haematological involvements were slightly more common in males (Table & Figure 3.2.6.5 (a)).

Of those with mucocutaneous involvement, the frequency of discoid rash was higher in male and there was no difference in the frequency of malar rash, photosensitivity or oral ulcers between the two genders (Table & Figure 3.2.6.5 (b)).

Table 3.2.6.5 (a): Extra-renal involvement by gender in lupus nephritis, 2005-2008

| Other organ involvement | Male (n=134) | | Female (n=919) | | Total (n=1053) | |
|-------------------------|--------------|----|----------------|----|----------------|----|
| | n | % | n | % | n | % |
| Mucocutaneous | 71 | 53 | 518 | 56 | 589 | 56 |
| Arthritis | 28 | 21 | 345 | 38 | 373 | 35 |
| Serositis | 11 | 8 | 88 | 10 | 99 | 9 |
| Cerebral | 22 | 16 | 109 | 12 | 131 | 12 |
| Haematological | 61 | 46 | 391 | 43 | 452 | 43 |
| Total | 193 | | 1451 | | 1644 | |

* Patients may have 1 or more "other organ involvements"

Figure 3.2.6.5 (a): Extra-renal involvement by gender in lupus nephritis, 2005-2008

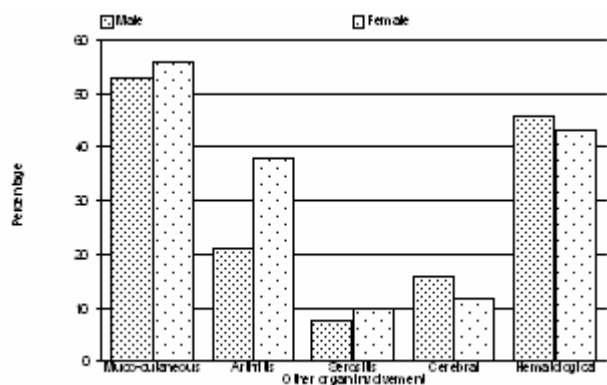
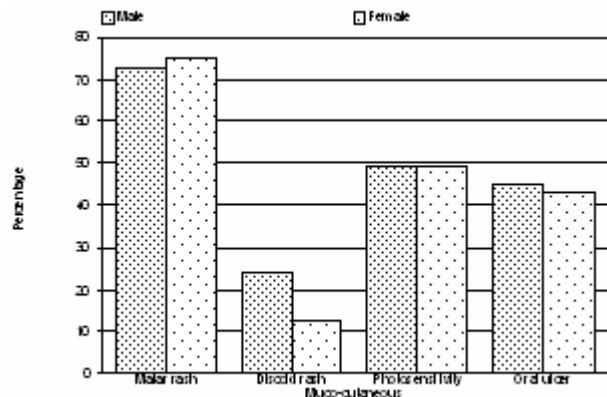


Table 3.2.6.5 (b): Mucocutaneous involvement by gender in lupus nephritis, 2005-2008

| Mucocutaneous involvements | Male (n=71) | | Female (n=518) | | Total (n=589) | |
|----------------------------|-------------|----|----------------|----|---------------|----|
| | n | % | n | % | n | % |
| Malar rash | 52 | 73 | 387 | 75 | 439 | 75 |
| Discoid rash | 17 | 24 | 64 | 12 | 81 | 14 |
| Photosensitivity | 35 | 49 | 256 | 50 | 291 | 50 |
| Oral ulcer | 32 | 45 | 221 | 43 | 253 | 43 |
| Total | 136 | | 928 | | 1064 | |

Figure 3.2.6.5 (b): Mucocutaneous involvement by gender in lupus nephritis, 2005-2008



3.2.7 Survival in lupus nephritis

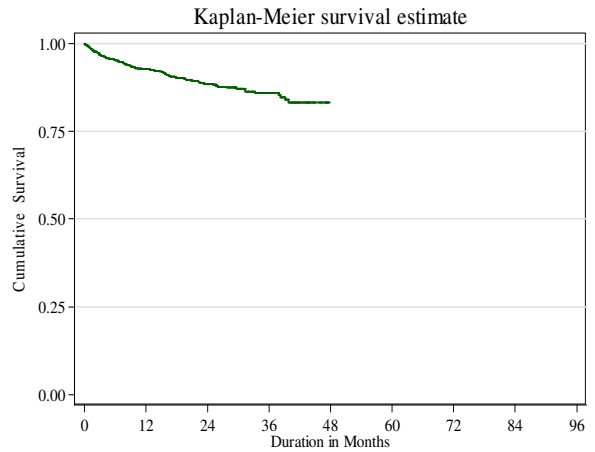
3.2.7.1 Patient survival in lupus nephritis

Table & Figure 3.2.7.1 shows that patient survival was 92.8% at 1 year and 85.9% at 3 years from the time of renal biopsy.

Table 3.2.7.1: Patient survival in lupus nephritis, 2005-2007

| Interval (months) | SLE patients survival | | |
|-------------------|-----------------------|------------|------|
| | n | % survival | SE |
| 0 | 991 | 100 | - |
| 12 | 642 | 92.8 | 0.01 |
| 24 | 381 | 88.5 | 0.01 |
| 36 | 173 | 85.9 | 0.01 |
| 48 | 2 | . | . |
| 60 | 2 | . | . |
| 72 | 2 | . | . |
| 84 | 2 | . | . |
| 96 | 2 | . | . |

Figure 3.2.7.1: Patient survival in lupus nephritis, 2005-2007



3.2.7.2: Renal survival in lupus nephritis

Table & Figure 3.2.7.2 shows that renal survival was 96.8% at 1 year and 96.2% at 3 years from the time of renal biopsy.

Table 3.2.7.2: Renal survival in lupus nephritis , 2005-2007

| Interval (months) | Renal survival | | |
|-------------------|----------------|------------|------|
| | n | % survival | SE |
| 0 | 829 | 100 | - |
| 12 | 578 | 96.8 | 0.01 |
| 24 | 354 | 96.2 | 0.01 |
| 36 | 163 | 96.2 | 0.01 |
| 48 | 2 | . | . |
| 60 | 2 | . | . |
| 72 | 2 | . | . |
| 84 | 2 | . | . |
| 96 | 2 | . | . |

Figure 3.2.7.2: Renal survival in lupus nephritis , 2005-2007

