APPENDIX I

Analysis Criteria And Statistical Methodology

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APPENDIX I : ANALYSIS CRITERIA AND STATISTICAL METHODOLOGY

ANALYSIS SETS

This refers to the sets of cases whose data are to be included in the analysis for this report.

1. All biopsies from 2005-2007
The analysis set in Chapter 1 includes all patients who underwent native and graft kidney biopsies from 2005-2007.

The analysis set consists of biopsy number where it is defined as number of episodes of distribution of renal biopsy in patients. Biopsy number was taken for the highest episode only for each patient. This analysis set was used for analysis in Chapter 1.

2. All native renal biopsy, 2005-2007
The analysis set in Chapter 1 includes patients who underwent native renal biopsy from 2005-2007.

3. Primary glomerulonephritis patients
Patients described in Chapter 2 are those whose age is more or equal to 15 years old with primary glomerulonephritis on renal biopsies performed 2005-2007

4. Lupus nephritis patients
Patients described in Chapter 3 are those whose age are more or equal to 15 years old, were ticked YES on SLE and were diagnosed lupus nephritis on renal biopsies from 2005-2007.

5. Paediatric native renal biopsy, 1999-2007
Patients described in Chapter 4 were aged less than 15 years old at the time that native kidney biopsies were performed during the period 1999-2007.

6. Renal Allograft biopsy
The analysis set is confined to all graft biopsies from 2004-2007.

STATISTICAL METHOD

Patient's characteristics
Patients' characteristics that were used throughout every chapter of this report were defined as the patient's age at biopsy, gender, and ethnic group. In statistics, imputation is the substitution of some value for a missing data point. Therefore, missing of patient's age was calculated with technique imputation for chapter 1, 2 and 3. Then we used the imputation values for the analysis set. Patients with ethnic group other than Malay, Chinese or Indian, will be classified as Others. Patient's centre state was used to describe the reported renal biopsy by state and is used for the analysis in chapter 1.

Clinical presentation
These sections described the current clinical presentation. All chapters are considered for clinical syndrome. Hypertension and renal function were additional presentations considered in chapter 2 and 3.

Biopsy procedure data
Hotdeck imputation is considered for variable biopsy technique when data is not available or missing.

Lab data
Few variables in this dataset were missing. Those variables were GFR, urine protein, 24hrs urine protein and urine RBC. Imputation was done to these variables.

Histological diagnosis
Analysis was confined to available data only . No imputation was done.

Centre survey data
Centre survey data were used to determine the numbers of unreported native renal biopsy in participating centers. This is only applying for Chapter 1.

Hazard ratio
The hazard ratio in survival analysis is the effect of an explanatory variable on the hazard or risk of an event. The hazard ratio compares groups differing in risk factors. If the hazard ratio is 2.0, then the rate failure in one group is twice the rate in other group. This was used for analysis in Chapter 4.

Risk ratio
The risk ratio is the risk of an event (diagnosis) relative to exposure. The risk ratio takes on values between zero and infinity. One is the neutral value and means that there is no difference between the groups compared. This was used for analysis in Chapter 4.

Survival analysis
The unadjusted survival probabilities were calculated using the Kaplan-Meier method. Survival analysis involves the modeling of time to event data. In this context, death was considered an event.
Survival rate is a part of survival analysis, indicating the percentage of people in this group who are alive for a given period of time after diagnosis with the minimal change disease and focal segmental glomerulosclerosis. This was used for analysis in Chapter 4.

Renal allograft biopsy rates
Renal transplant biopsy rate is calculated by the ratio of the count of number of patients in a given year (according to its age group) to the mid-year population of Malaysia in that year, and expressed as in per million populations. This was used for analysis in Chapter 5.

American Rheumatological Association (ARA) Criteria
An ARA criterion is defined as YES on SLE clinical presentation and SLE lab data. Eleven criteria have been considered for ARA. Nine criteria are from SLE clinical presentation with presentation of malar rash, discoid rash, photosensitivity, oral ulcers, arthritis, serositis, renal, cerebral, and hematological. However, the other two are from SLE lab data where patient should have positive on ANF, and at least 1 is Positive on dsDNA, ssDNA, Anti-cardiolipin antibody, Anti-phospholipid antibody, Histone, Nucleo, Ro, La or Sm. This was used for analysis in Chapter 3.

Extra renal involvement criteria
Patient who have at least one of the followings: malar rash, siscoid rash, photosensitivity or oral ulcers will be grouped as Muco-cutaneous for other organ involvement criteria. This was used for analysis in Chapter 3.

Density of Histogram
Density scales the height of the bars so that the sum of their areas equals 1. The density scale is calculated by the probability of the patients in the interval that concerned and divides with that interval. This figure was considered in Chapter 2.