Metabolic Syndrome in Malaysia: Implications in Clinical Practice.

Nor Azmi Kamaruddin

National University of Malaysia,
Kuala Lumpur.

Metabolic syndrome comprises of a constellation of risk factors, including abdominal fat, dyslipidemia, hypertension, and elevated glucose. The main pathological abnormality in metabolic syndrome is believed to be insulin resistance. In 2007 the Ministry of Health, Malaysia through its E-Health initiative funded the Metabolic Syndrome Study of Malaysia (MSSM) which randomly screened (with OGTT) nearly 5,000 adults throughout the country. Five areas were selected based on the ethnic composition in the country which was further split along urban-rural divide.

Preliminary results derived primarily from the MSSM study in Tanjung Karang, a rural area with a predominantly Malay population suggest that metabolic syndrome, as defined by IDF 2005 criteria, affects an estimated 36.5% and 50.5% of adult males and females respectively (39% and 45.9% according to the NCEP III Criteria). This is in stark contrast to the prevalence of 3.9%, 3.2% in men and 10.9%, 7.2% in women (IDF followed by NCEP III criteria) obtained from a study done in Anhui province, a rural area in China at about the same time.

Interestingly, the Tanjung Karang study also revealed an unexpectedly high proportion of adults with abnormal glucose tolerance with 32.2% prevalence of diabetes mellitus, nearly two-third of whom were discovered during the study. The gravity of the situation is even more mind boggling when we consider that the mean household income in Tanjung Karang is far below that of the national average (45.0% of the subjects reported a monthly household income of RM500 or less).

Based on the Finnish Kuopio Ischaemic Heart Disease Risk Factor Study, men with ATP III defined metabolic syndrome were 2.9 to 4.2 times more likely to die of coronary heart disease. Metabolic syndrome accounted for an estimated 18% of the variance in cardiovascular risk. Over the 11.4 year follow up, 17-21% of those with metabolic syndrome died compared to 10% of those who did not have metabolic syndrome. Interestingly, only 9-14% of the subjects had metabolic syndrome. If we were to extrapolate these figures to Tanjung Karang, a fifth of the 42.5% of the adult population with metabolic syndrome will die in the coming decade. With nearly two-thirds of our acute coronary syndrome admissions having abnormal glucose tolerance (based on the Malaysian Acute Coronary Syndrome Registry 2008), these data paint a grim picture.

Subjects with metabolic syndrome in the Hong Kong Cardiovascular Risk Factor Study who were followed up for a median period of 6.4 years had a hazard ratios of 4.1 and 3.5 respectively (based on the NCEP and IDF definitions of metabolic syndrome) of developing diabetes. This translates into an incidence of 42.2% (NCEP) and 29.2% (IDF) respectively in the next 10 years. For the Tanjung Karang population an additional 13% (IDF) and 18% (NCEP) will develop diabetes in the next 10 years on top of the existing 32.2%. Unless something is done, the prevalence of diabetes in Tanjung Karang will top 50% by the year 2020! A historic timeline indeed for this country.

In addition to the development of cardiovascular disease and diabetes, the presence of metabolic syndrome predisposes sufferers to other serious pathologies such hypertension, dyslipidemia (both of which are also components of the syndrome), cancers, chronic kidney disease, sleep apnoea and numerous other diseases, however it is the first two that would inflict the highest toll on the individuals. For the Tanjung Karang folks, what is in store is even more bleak when we consider their meagre incomes.

(The above is the abstract of the lecture entitled “Metabolic Syndrome in Malaysia: Implications in Clinical Practice” to be presented at the Diabetes Asia 2009 Conference at 10.30 am, the 8th of October 2009 at the Sunway Resort Hotel & Convention Centre, Kuala Lumpur)