



# Lethal Congenital Malformation In Pre-existing Diabetes And Gestational Diabetes Mellitus. Analysis From Malaysian Tertiary Hospitals



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## Background review

The global incidence of Diabetes Mellitus (DM) is on the rise and estimated to be 6.4% as of 2010. Diabetes in pregnancy is a well-known risk factor for congenital malformations. Good glycaemic control before and thru organogenesis reduces the incidence.

## Objectives

To study the distribution and demographic characteristics of pre-existing DM and Gestational Diabetes Mellitus (GDM) with Lethal Congenital Malformation (LCM) in Malaysian tertiary hospitals.

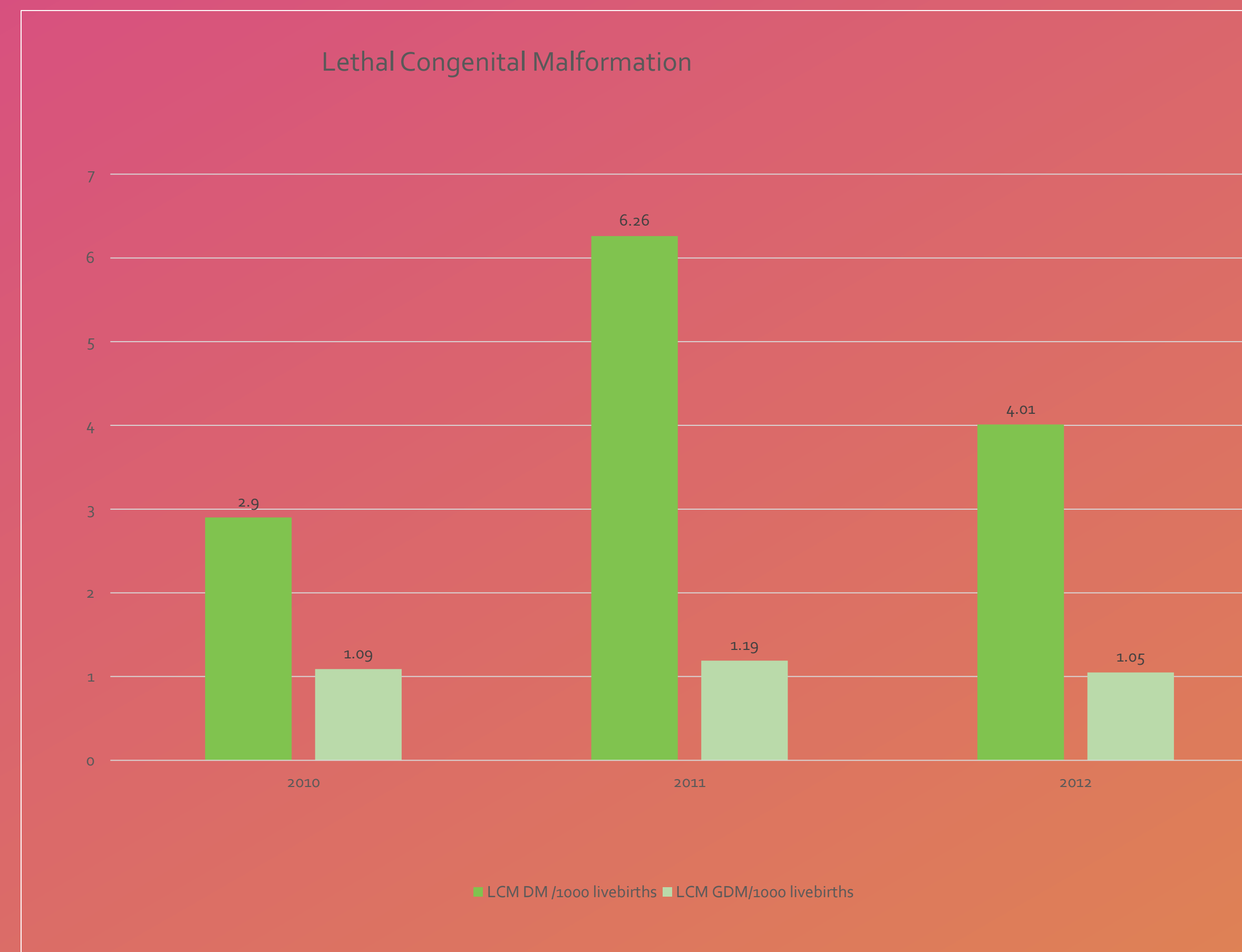
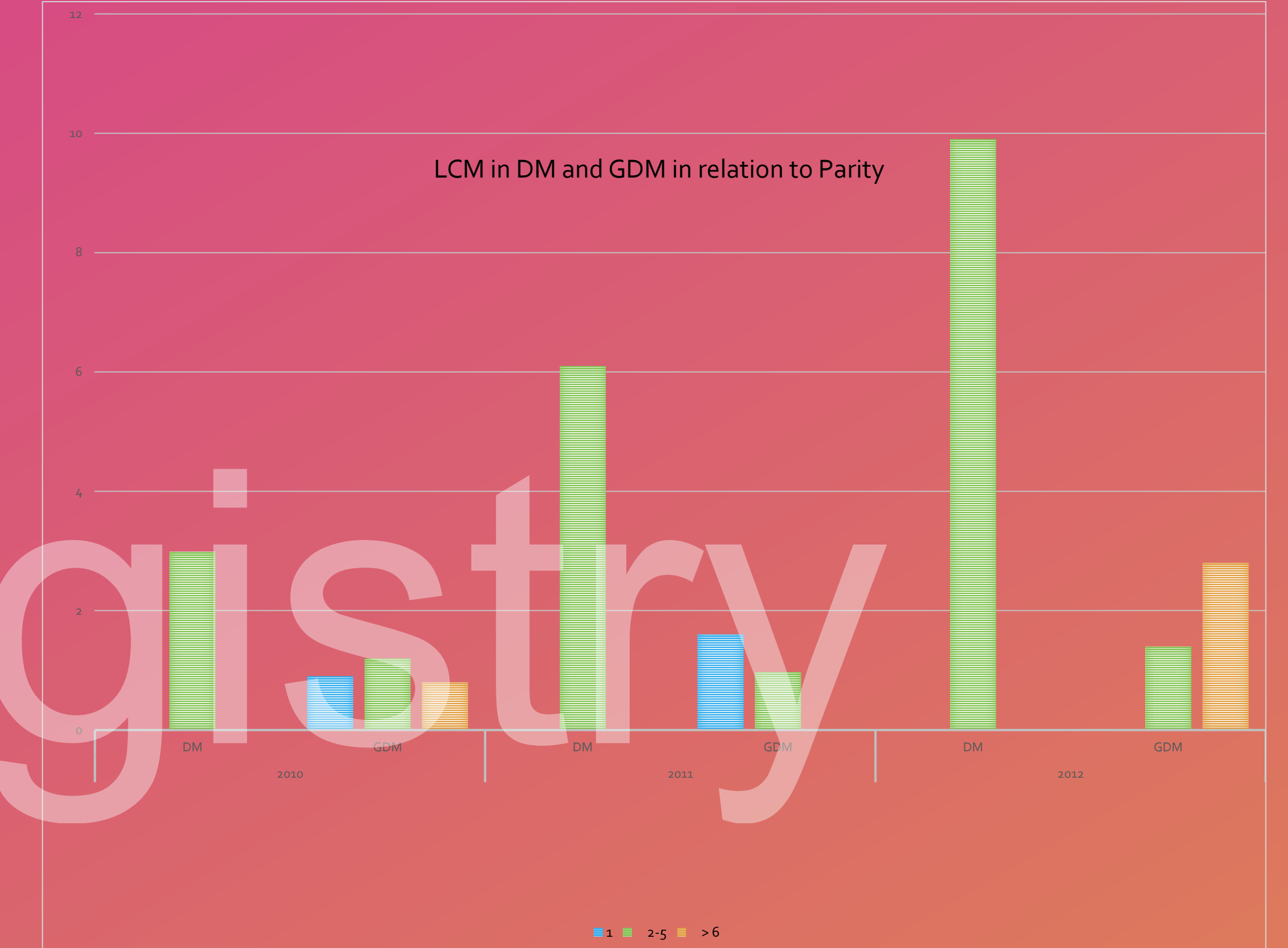
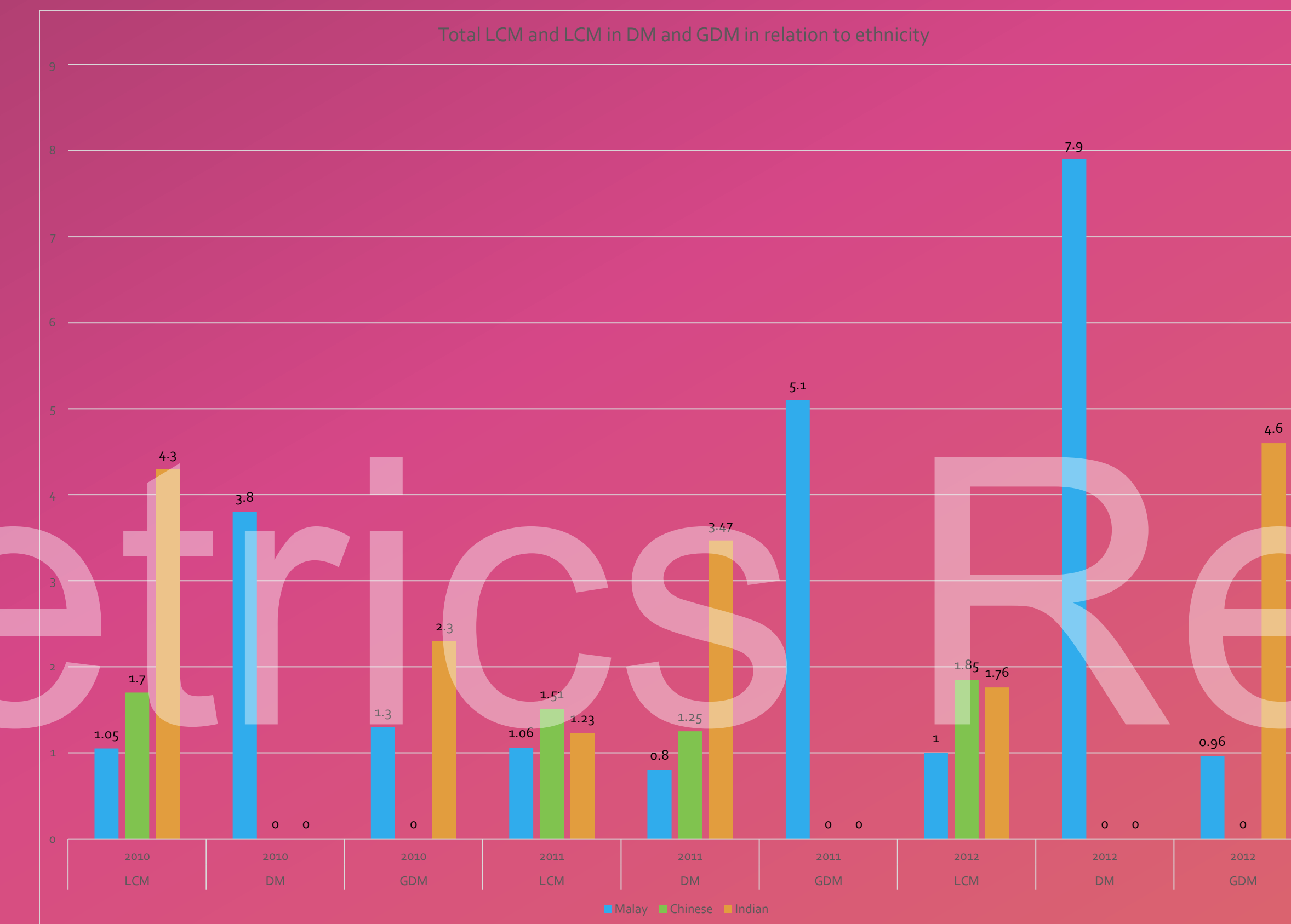
## Methodology

This is a retrospective cohort study of stillbirth with LCM in women with Pre-existing DM and GDM from 1<sup>st</sup> January 2010 to 31<sup>st</sup> December 2012 from the National Obstetrics Registry. The National Obstetric Registry (NOR) in an online database that captures data from 14 tertiary hospitals in Malaysia. A total of 397,521 deliveries were analysed in this period of which there were a total of 2713 cases of pre-existing DM and 32188 cases of GDM. Descriptive analysis was used to analyse the data.

## Results

The published National stillbirth rate was 7.7 (2010), 7.6 (2011) per 1000 live births. The overall stillbirth rate in Diabetic pregnancies was higher at 9.05 (2010), 7.98 (2011) and in 2012 it was 8.69 per 1000 live births from NOR. The LCM rate in 2010 with pre-existing DM and GDM was 3 and 1 per 1000 live births respectively and we saw a similar finding for all three years. LCM rate was higher with pre-existing DM as compared to GDM in age 30-39 years but the rates were high in age 50-54 years with GDM. In pre-existing DM, LCM rate was higher in Malays where else in Indians there was a higher prevalence of LCM with GDM for all three years. Prevalence of LCM in pre-existing DM in Para 2-5 was higher compared to GDM whilst LCM rate with GDM is prevalent in para 1 and Para 6 and more.

Age in years	2010		2011		2012	
	DM	GDM	DM	GDM	DM	GDM
10-14	-	-	-	-	-	-
15-19	-	-	-	-	-	-
20-24	-	1.77	-	-	-	-
25-29	-	0.5	0.02	-	-	1.4
30-34	3.3	1.2	0.08	0.6	-	0.73
35-39	4.08	1.03	5.78	1.5	9.5	1.3
40-44	11.9	0.1	0.2	0.2	4.6	8.9
45-49	-	-	-	2.15	-	1.29
50-54	-	-	-	25.6	-	-
55-59	-	-	-	25.0	-	-



## Conclusions

This three year review shows the still birth rate due Diabetic pregnancy was high. Stillbirth rate due to LCM was higher among pre-existing DM than GDM. Amongst all the communities the Indians had the highest rate of GDM as well LCM. Hence in light of these findings we recommend targeted screening for GDM in the Indian population. LCM rate was higher with pregestational DM and we highly advocate preconception counselling for this group of patients. True incidence of LCM is not known as there may have been cases of spontaneous loss that had not been captured.