GLYCEMIC STATUS OF DIABETIC PATIENTS ON THERAPY

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Introduction

- Chronic hyperglycemia is associated with long term macrovascular and mircrovascular complications that can be delayed or prevented by treating hyperglycemia. This has led to the use of intense regimens for strict glycemic control.

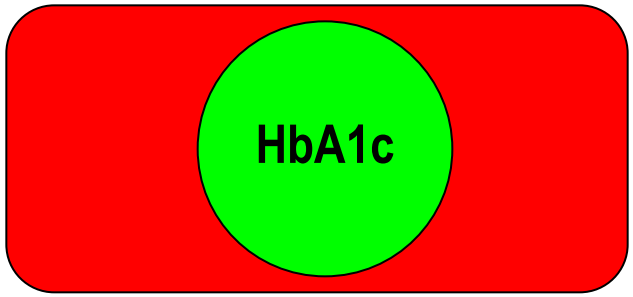
- To see the response of these regimens, periodic assessment of glycemic status is essential. A single measurement of blood glucose level can sometimes be misleading.

- HbA_1c (glycated Haemoglobin) level gives a stable picture of glycemic status in preceding 3 months.

- Red cells are freely permeable to glucose. As a result glucose becomes irreversibly attached to hemoglobin at a rate dependant upon the prevailing glucose.

- The average (mean) HbA_1c changes in a dynamic way and reflects the mean blood glucose concentration over the previous 6 to 8 weeks.

Glucose & Hb circulates in blood, combine gradually over 10 weeks period to form HbA_1c



Aims of the study

1. To see HbA_1c level in various treatment regimens in treated diabetic patients.

2. To correlate HbA_1c level with demographic variables and treatment modalities.

Methodology

- **Study design :** Observational study
- **Sample size :** 170
- **Place of study:** Department of Internal Medicine, BIRDEM
- **Duration :** Between the period of January 2004 to September 2005.

Inclusion criteria:

- Admitted diabetic patients only
- On regular therapy for more than 6 months

Methods: HbA_1c level were measured during admission by HPLC (high performance liquid chromatography).

Arithmetic mean of HbA_1c level was calculated and compared according to sex, age groups, duration of DM, education level & different treatment modalities.

Data analysis:

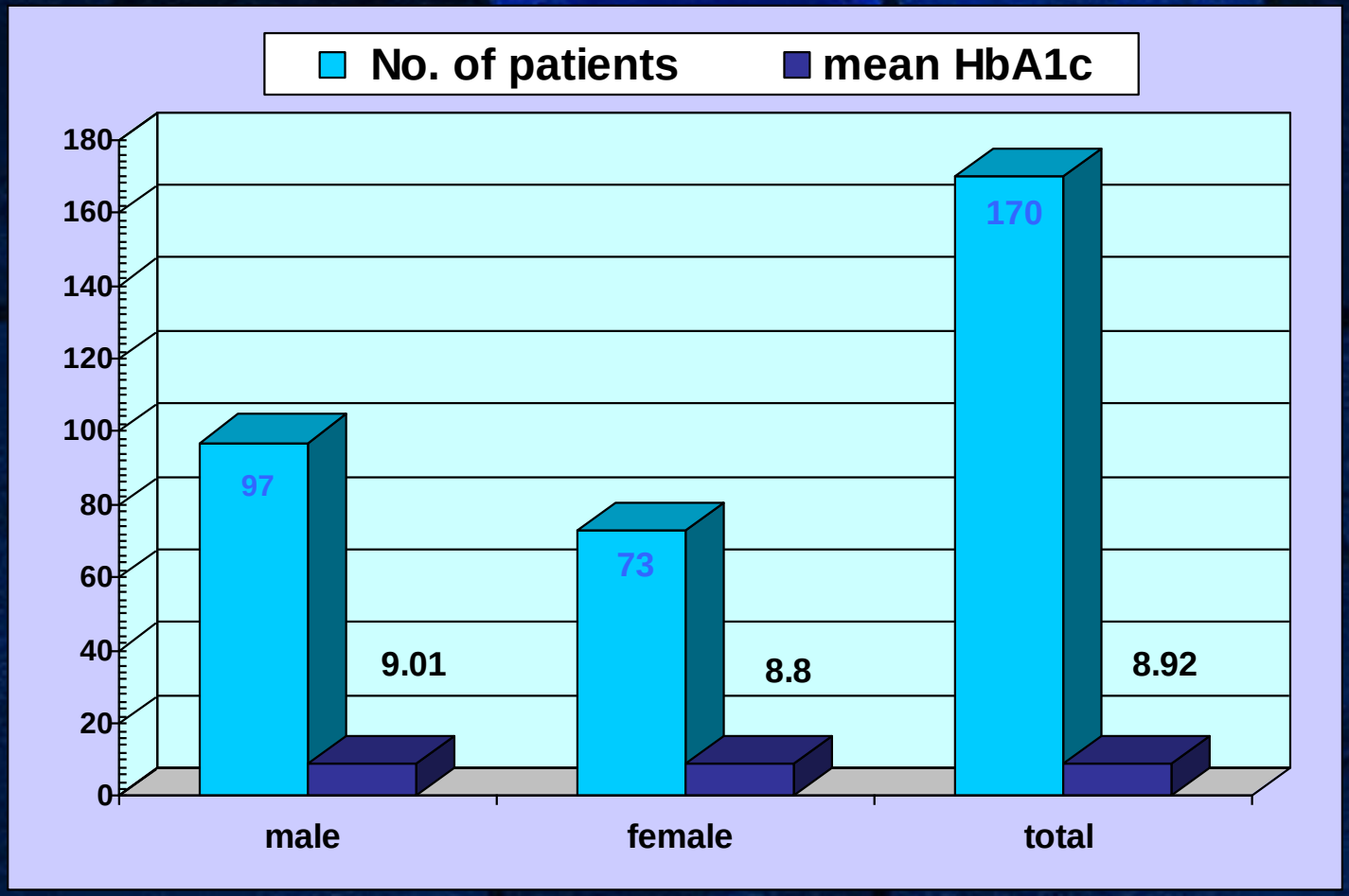
All statistical analysis was done using SPSS

Sex distribution

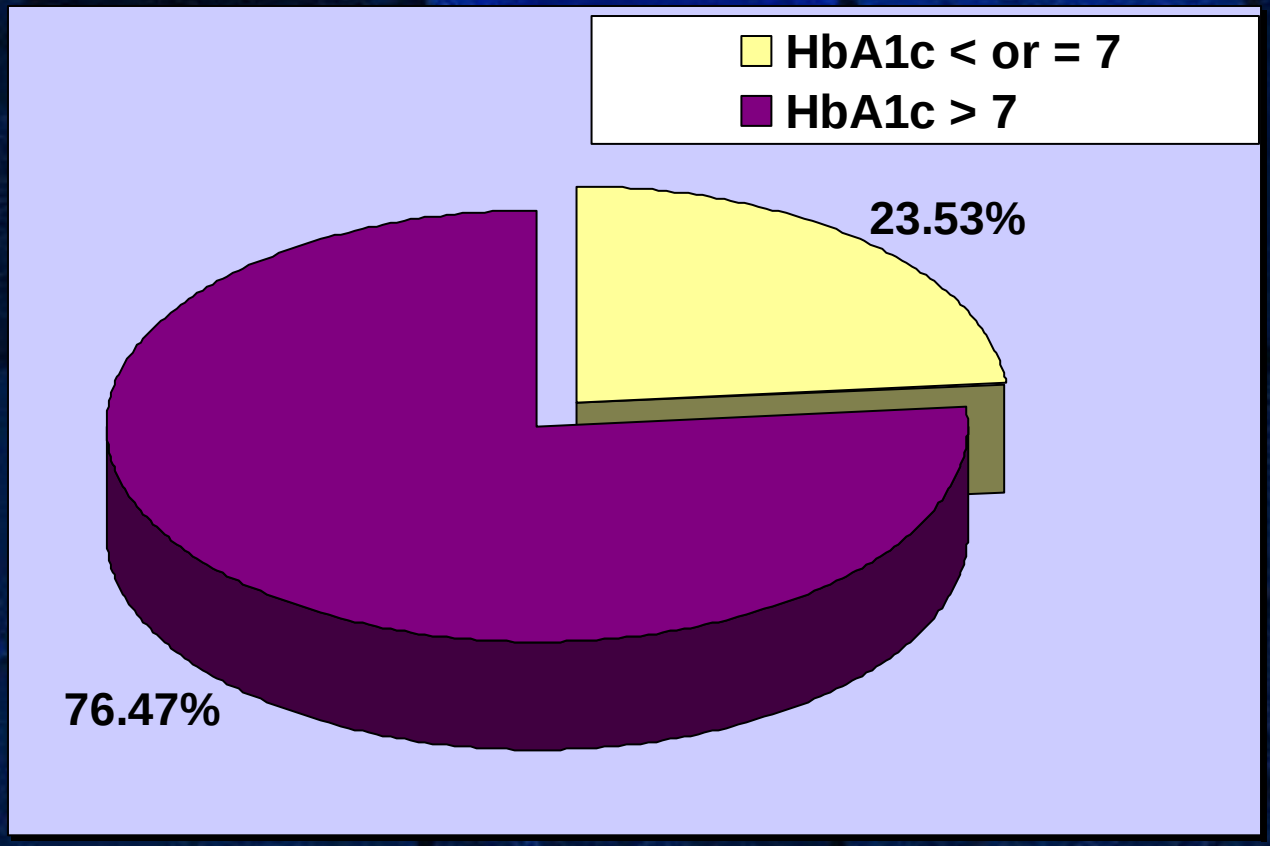
Sex	No.	Percentage
Male	= 97	(57%)
Female	= 73	(43%)
Total	170	

Results

Sex	Mean HbA_1c	Std. deviation
Male	9.01	2.405
Female	8.80	2.197
Total	8.92	2.314

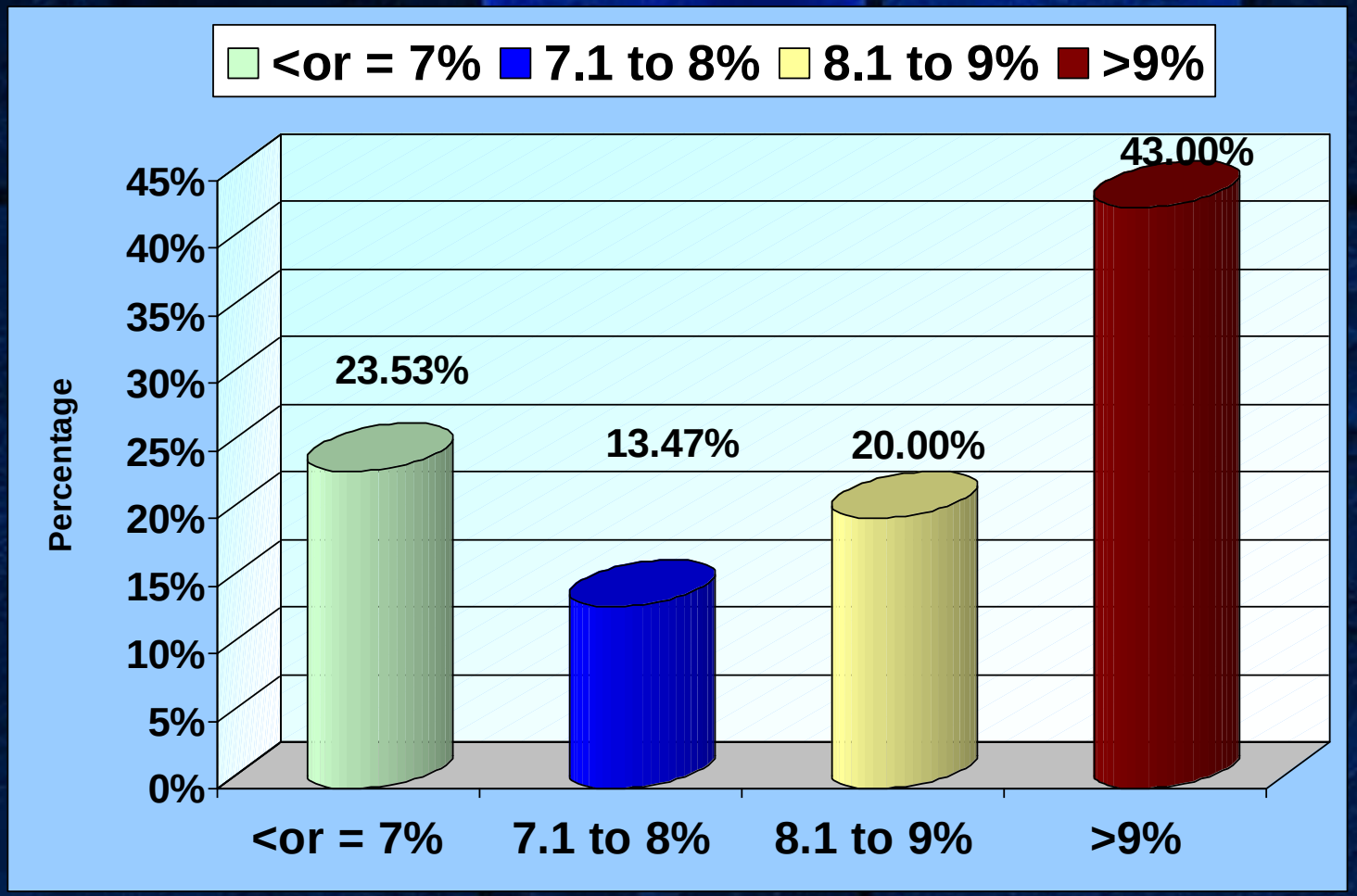


Mean HbA_1c related to sex

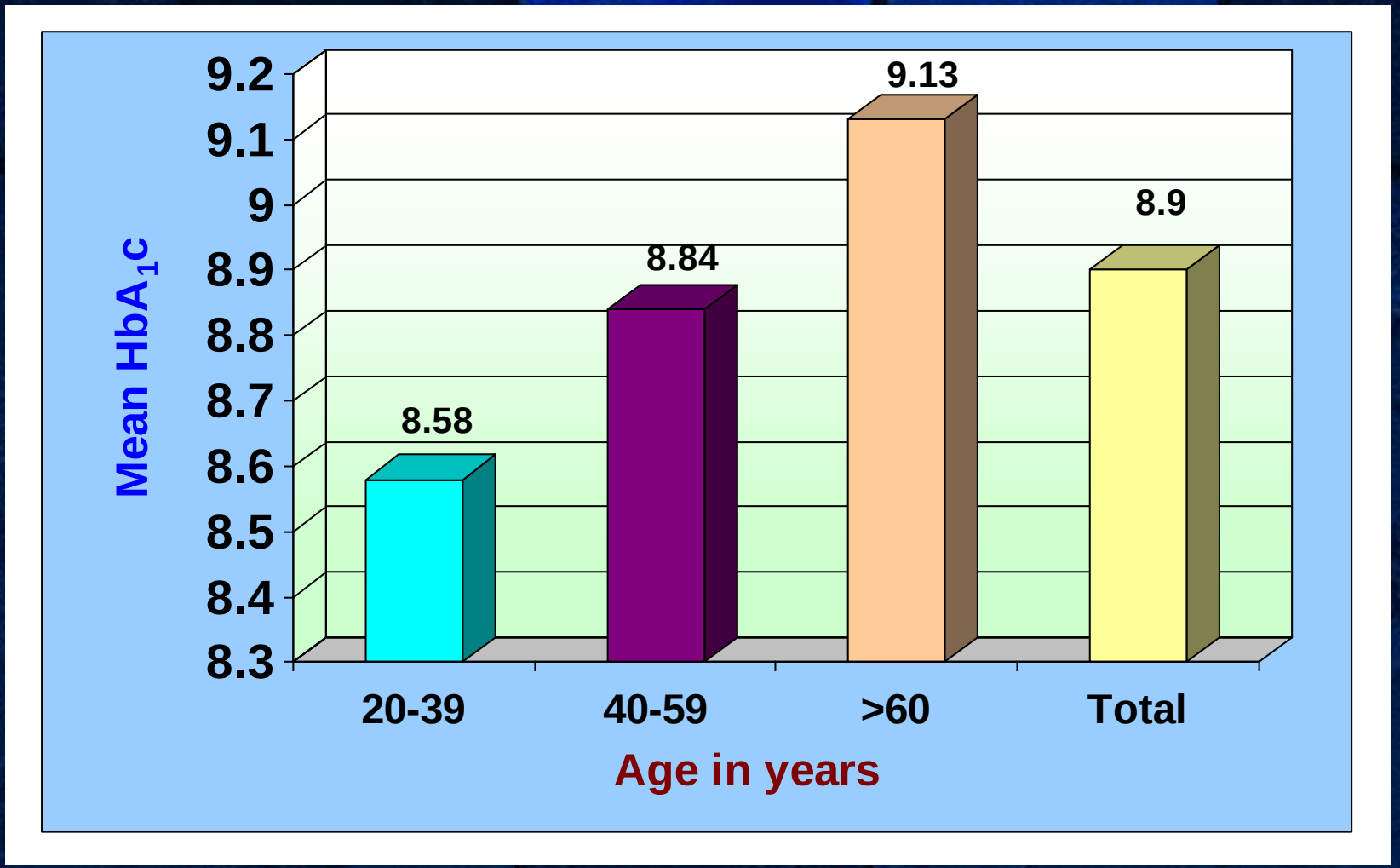


Distribution of patients according to HbA_1c with cut off value <7%

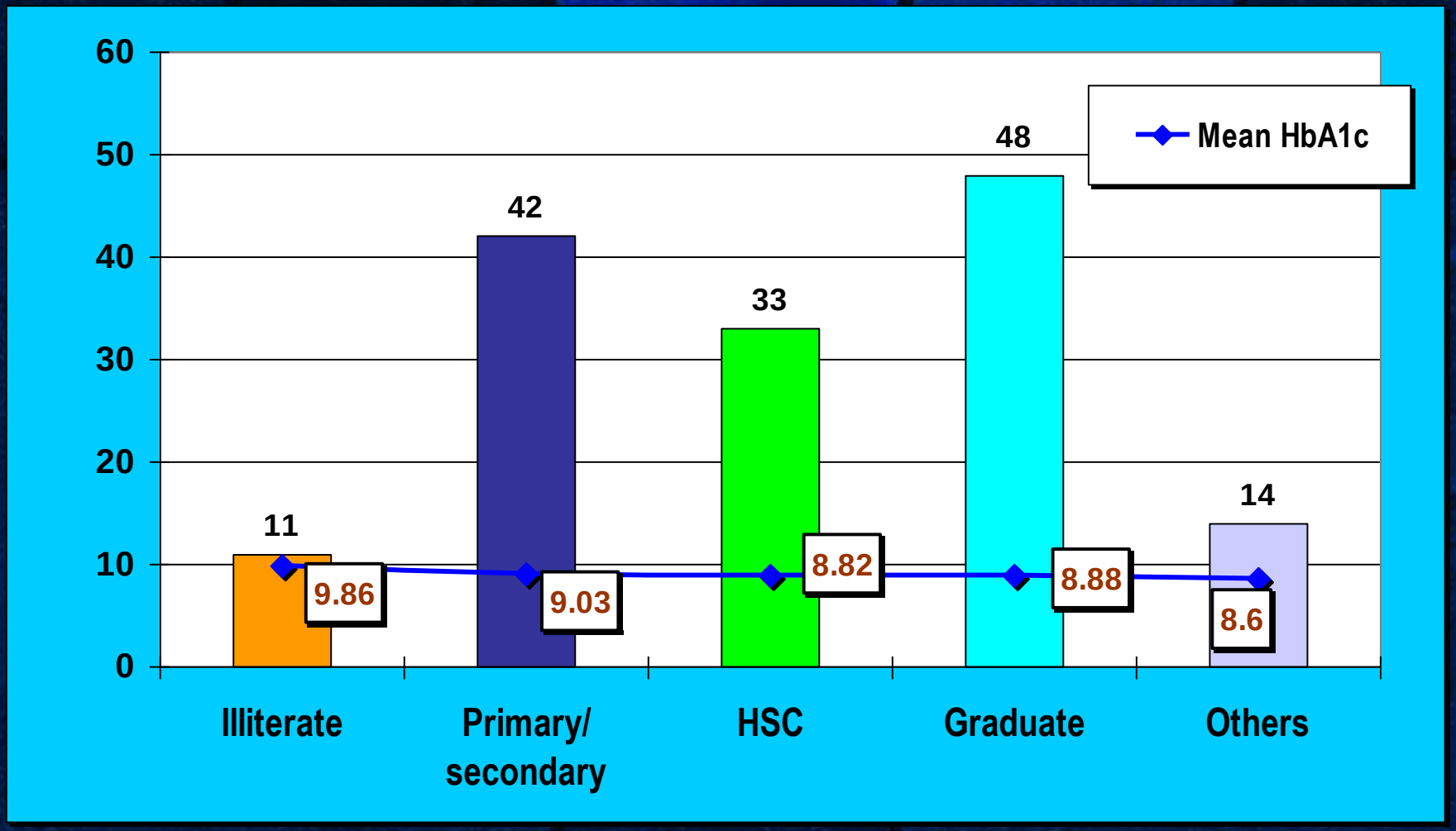
Distribution of patients according to HbA_1c



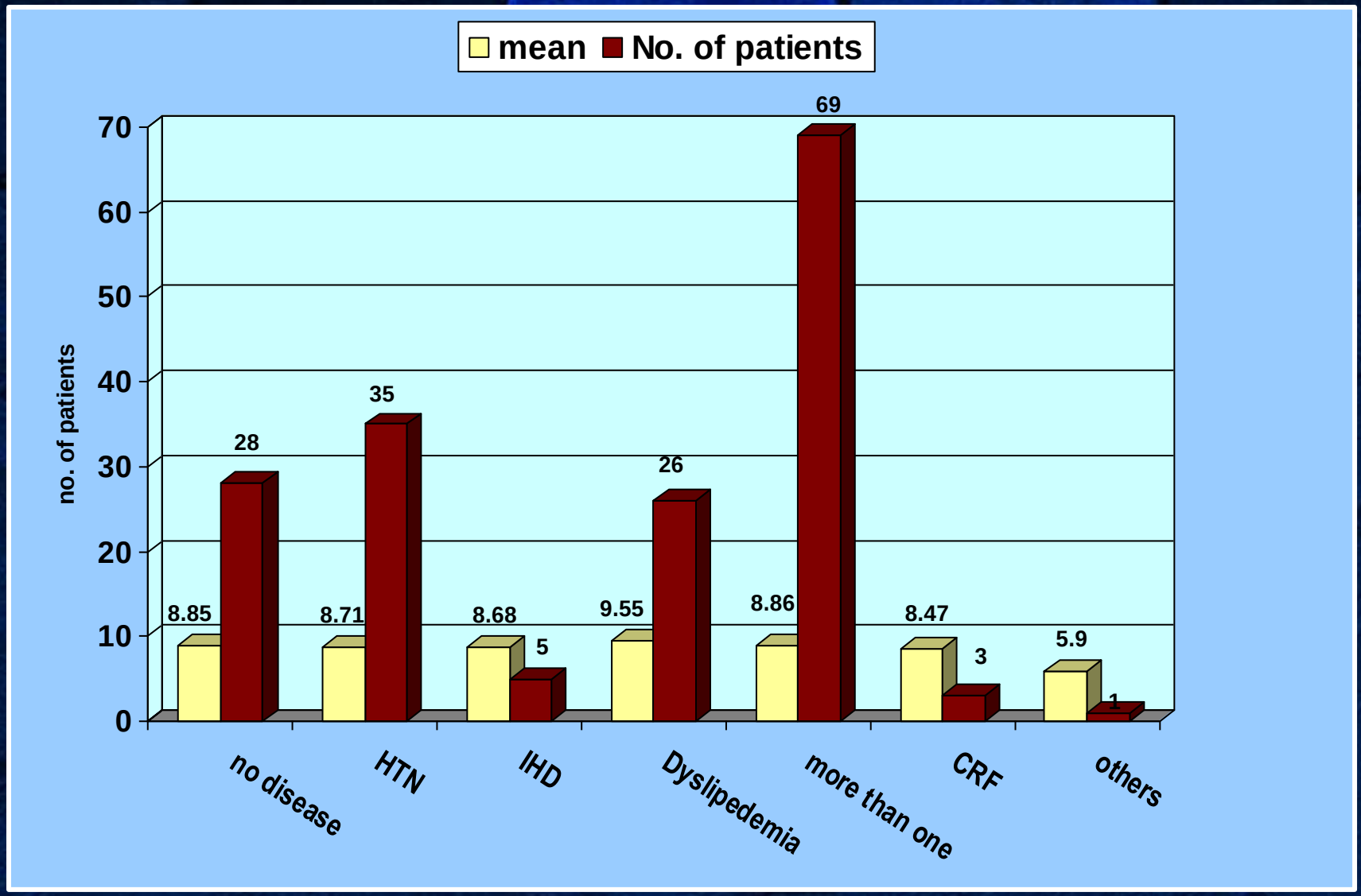
Distribution of HbA_1c according to age groups



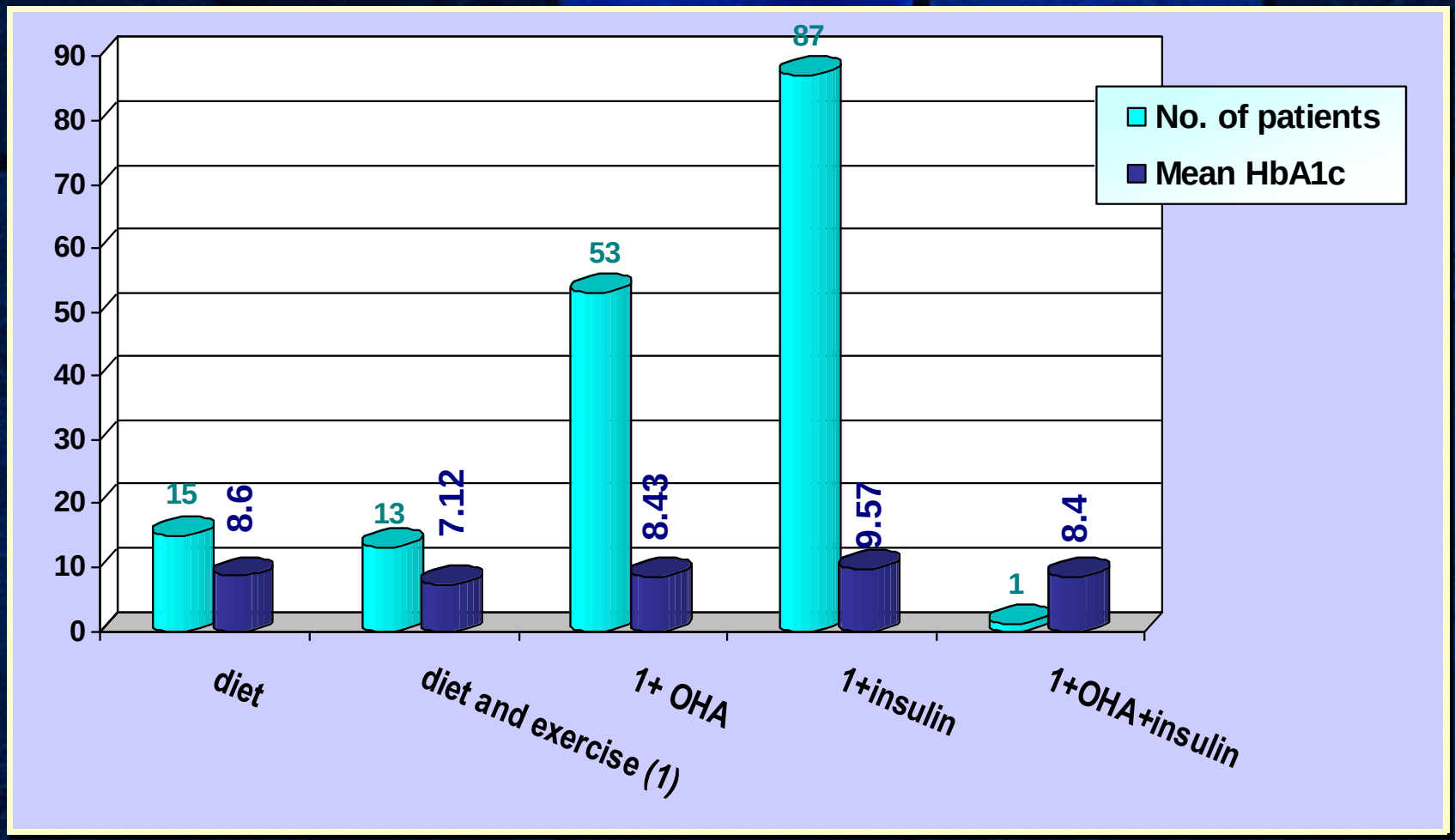
Mean HbA_1c according to education level



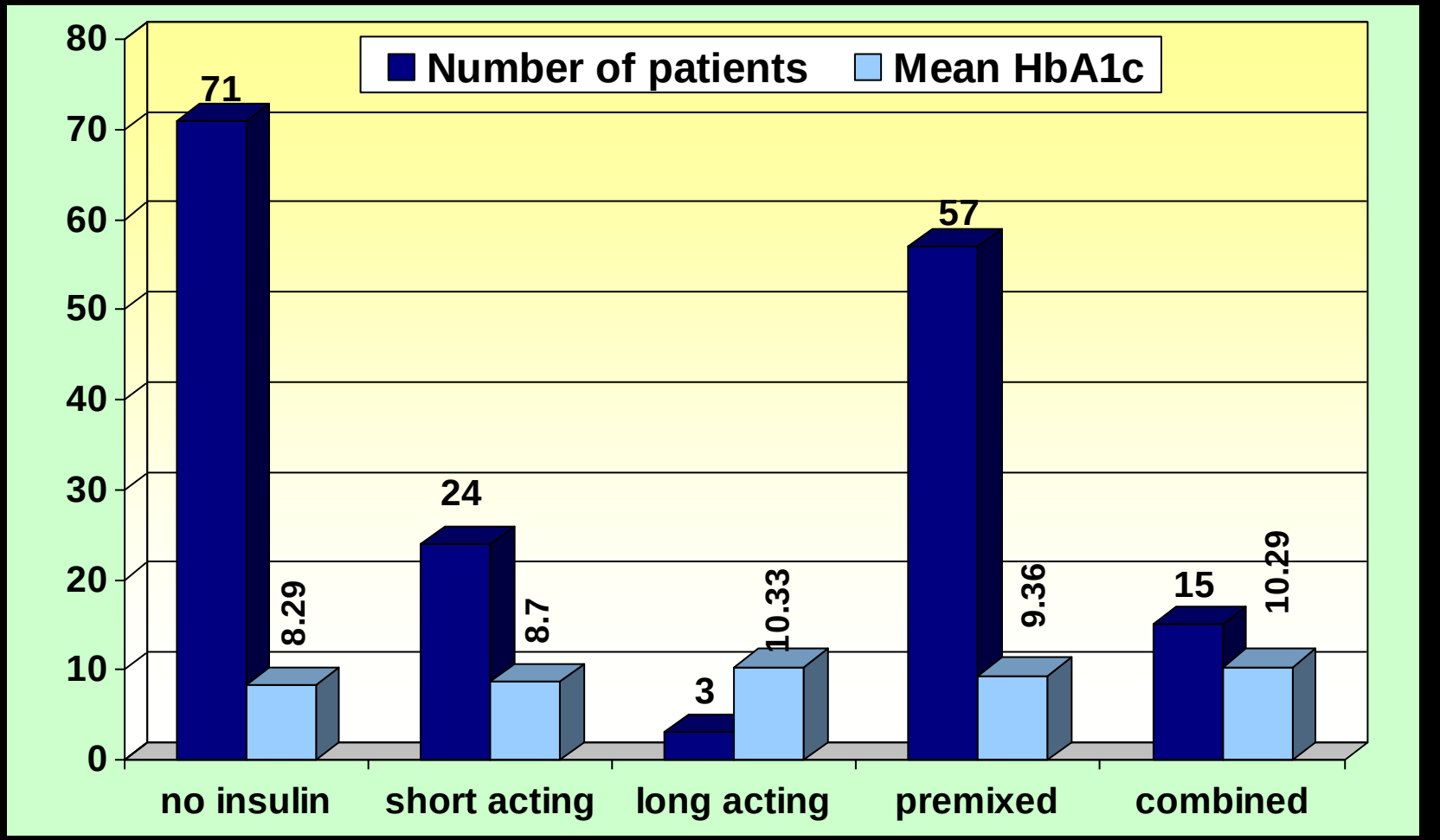
Distribution of HbA_1c according to co-morbidity



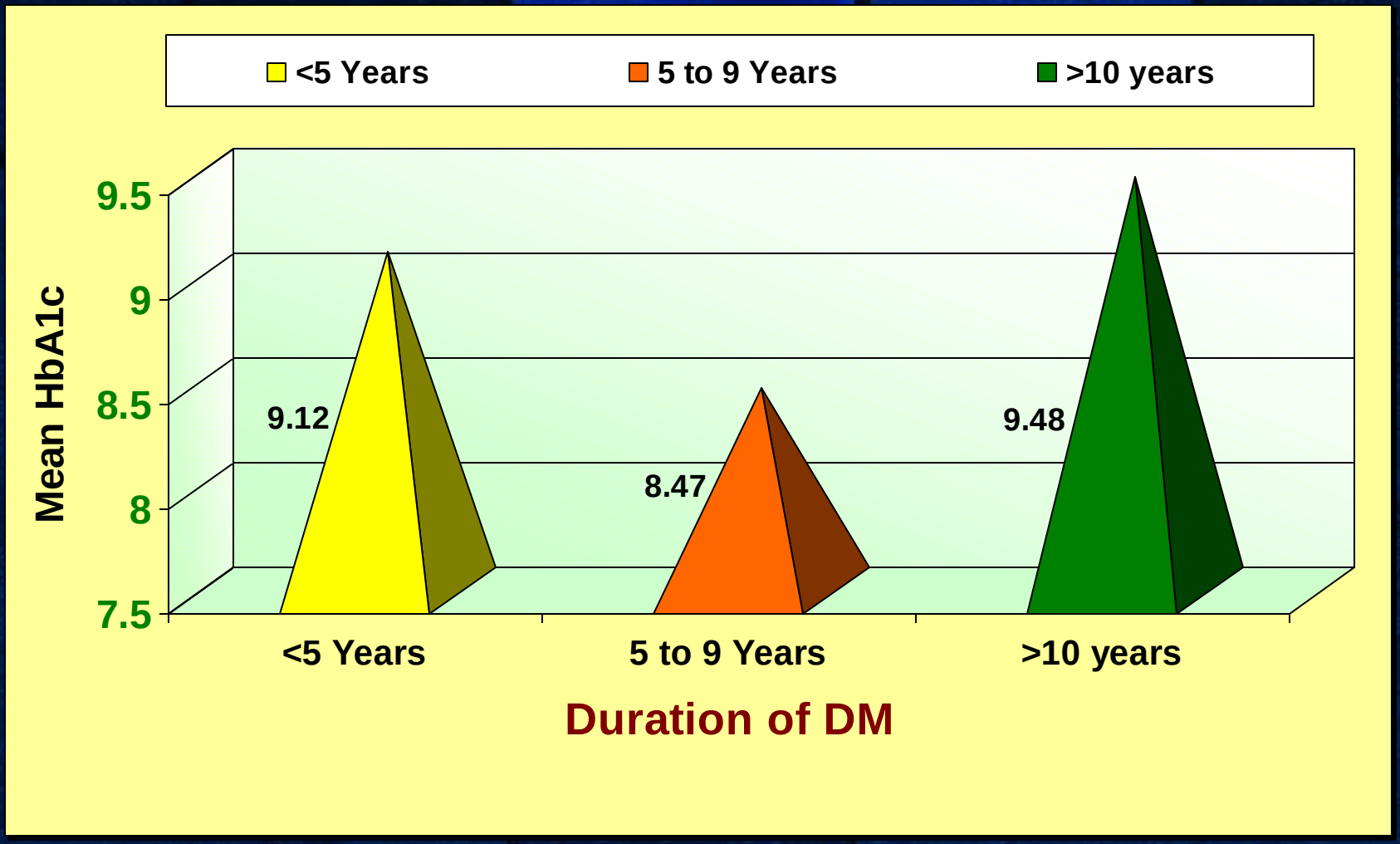
Distribution of HbA_1c according to treatment modalities



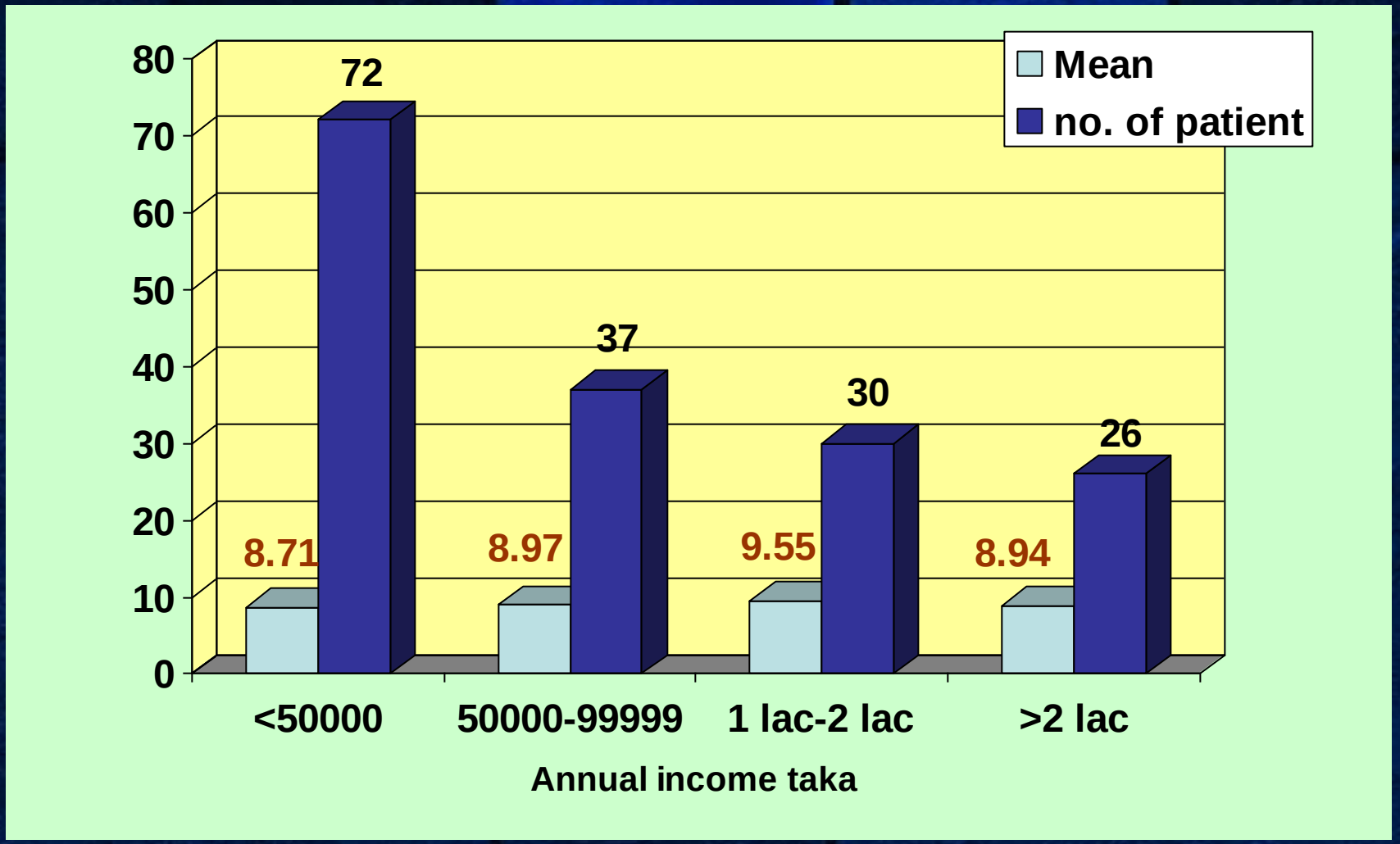
HbA_1c according to different types of insulin



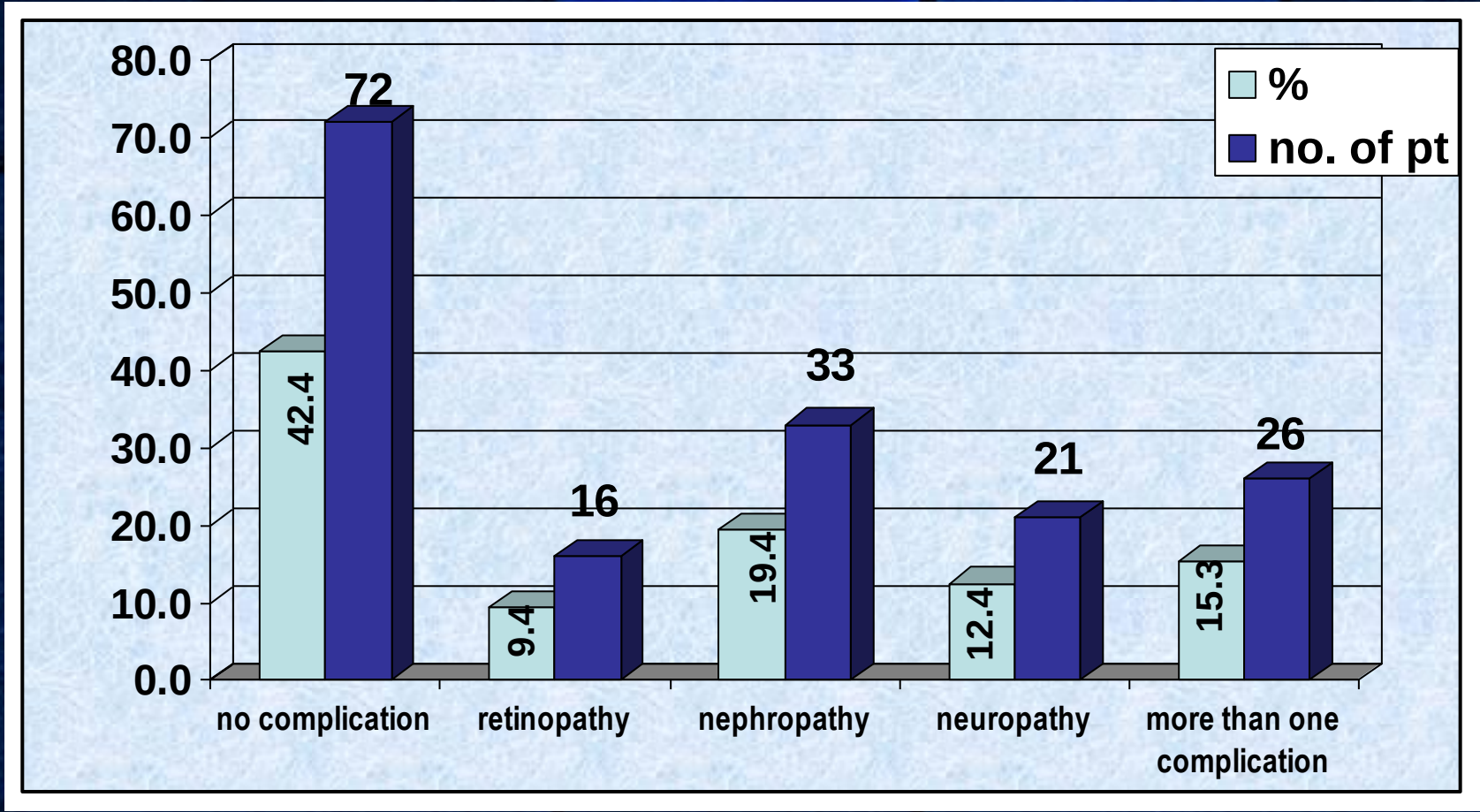
Mean HbA_1c according to duration of DM



Mean HbA_1c according to income group



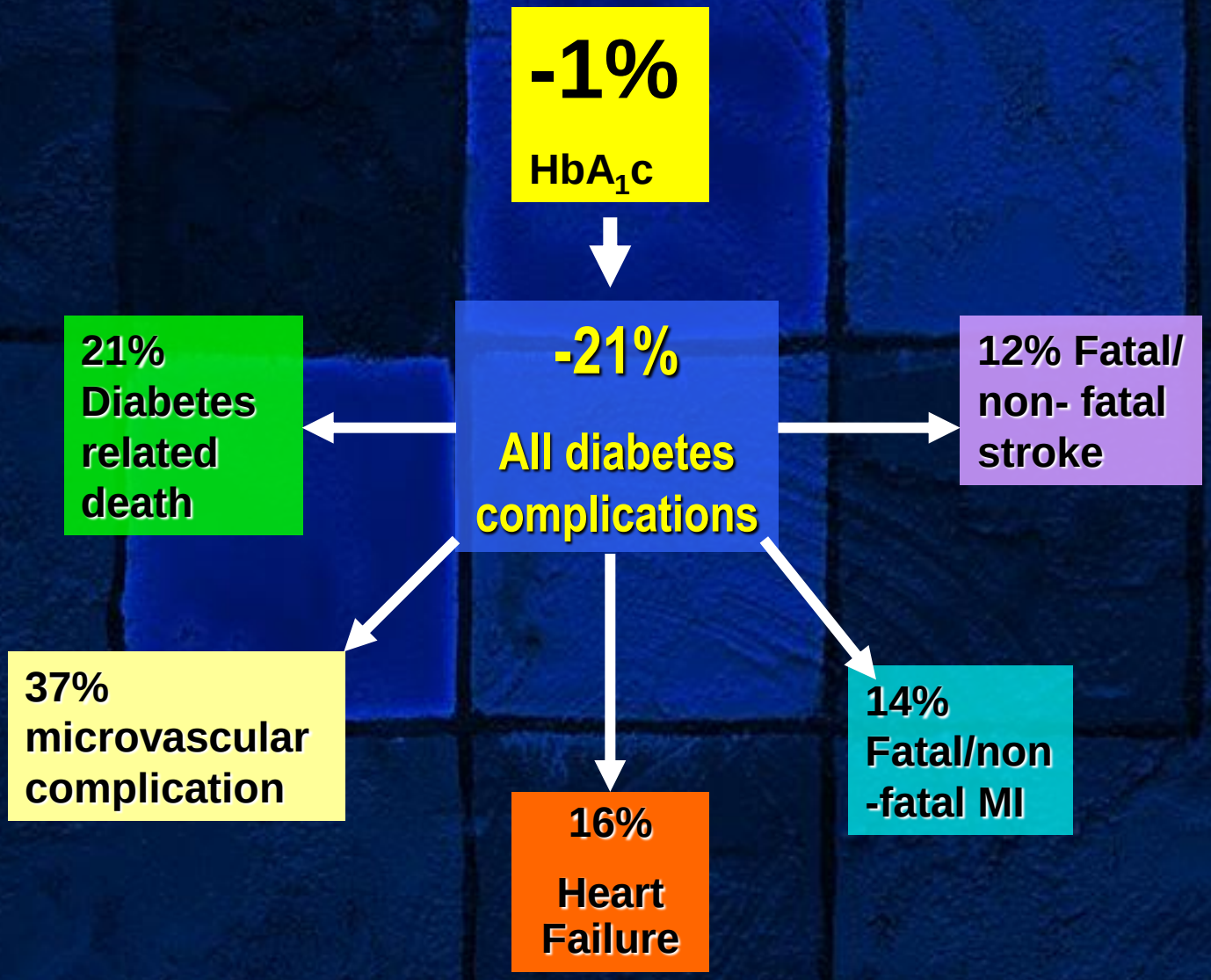
Distribution according to comorbidity



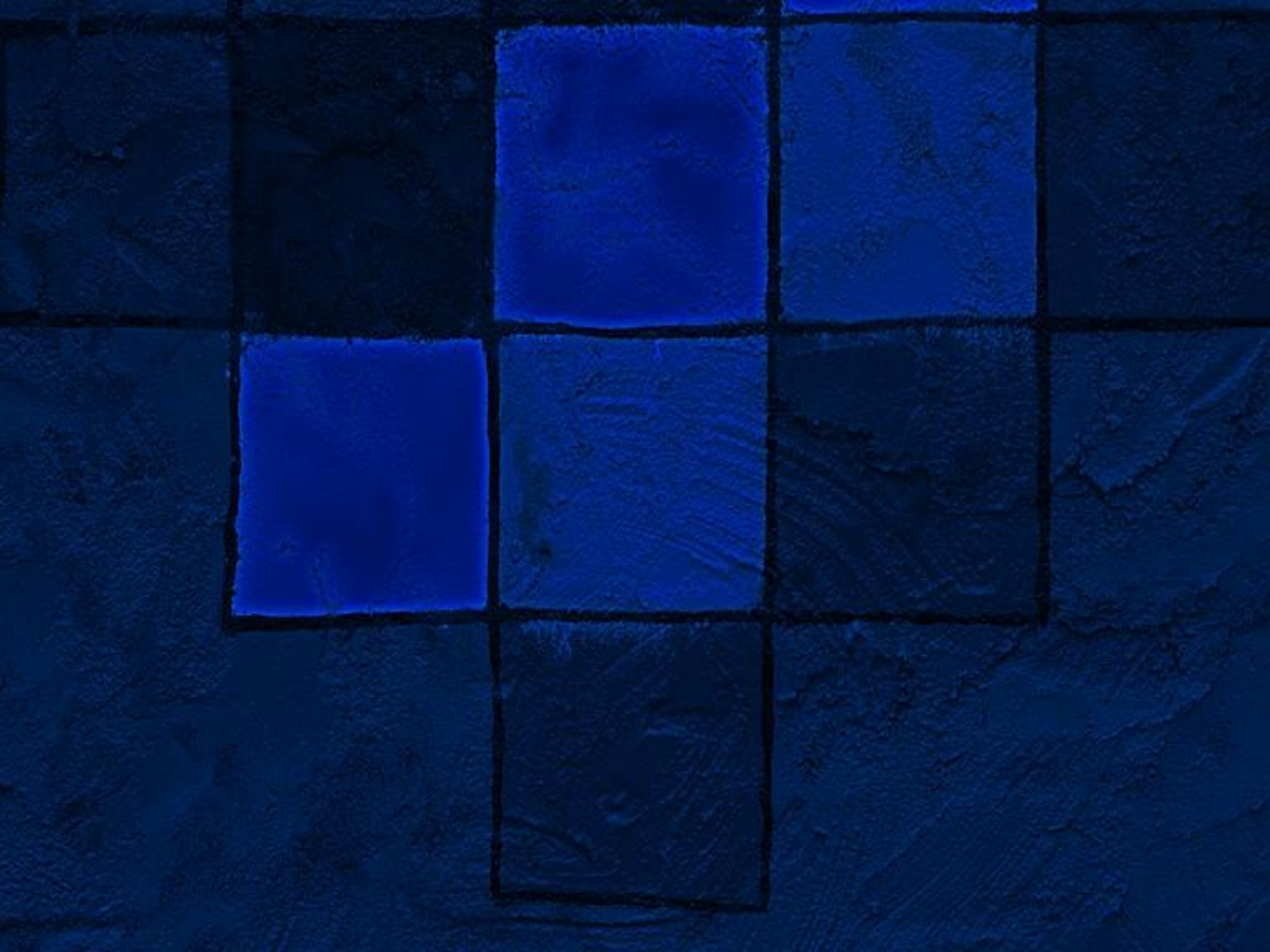
Inference

- Another study at BIRDEM showed that only 4% of diabetic patients on treatment knew about the value of HbA_1c estimation and only 2.8% knew about target HbA_1c level.

- In our study only 23.53% of our patients had good glycemic control.


-1%
HbA1c
-21%
All diabetes complications
21% Diabetes related death
12% Fatal/ non- fatal stroke
37% microvascular complication
16% Heart Failure
14% Fatal/non -fatal MI

UKPDS study

Conclusion

The vast majority of patients had higher HbA_1c level >7 and also uncontrolled diabetes. So, it is very important that the physician should know the importance of monitoring DM control by HbA1c and subsequently motivating the patient to control their diabetes.