1. INTRODUCTION

SMGB is one of the core components of diabetes therapy – irrespectively of the therapeutic approach (diet only, oral medications or insulin). It supports a safe and effective drug therapy and provides additional feedback on how diet and lifestyle impact blood glucose levels. Accordingly, it is recommended by both international diabetes therapy guidelines and national guidelines (e.g. ADA guideline). The necessary testing frequency is based on the specific therapeutic approach as well as the individual ability of patients to make best use of SMBG information for therapy and lifestyle adjustments.4 Drugs that can cause hypoglycemia (e.g. sulfonylurea, insulin) do require SMBG for safety reasons. Furthermore, any insulin therapy with a flexible insulin dosing scheme does require frequent SMBG for adequate insulin dose determination to support a safe and effective therapy.5-7 SMBG test frequencies correlate with the quality of glycemic control.8

SMGB is reimbursed in many healthcare systems – in particular in combination with insulin therapy. Individually affordable SMBG, e.g. in case of non-reimbursement or co-payments, impairs the adherence to recommended test frequencies.9 While India does nationally regulate prices for drugs and medical devices, patients do in general have to cover the full cost of their therapy by themselves.

2. OBJECTIVES

In 2014 an Indian guideline on glycemic monitoring was published.10 This study aims to assess the level of SMBG usage in patients on different diabetes therapies. It also explores the correlation of SMBG usage with glycemic control as measured by HbA1c.

3. METHODS

Source data for this explorative analysis is the CSD-PDS Diabetes survey (Cegedim Strategic Data – Patient Data Study) covering drug treated patients with diabetes. All 2,250 cases were documented in the 2nd half year 2013. PDS Diabetes is a syndicated research with a fixed representative panel of diabetes, cardiologists and GPs from larger Indian cities using a standardized documentation of cases. SMBG usage is analyzed by therapeutic subgroups: oral anti-diabetic therapy (OAD 75.2%, no insulin use), basal supported oral therapy (BOT 9.5%, OAD 75.2%, no insulin use), conventional oral anti-diabetic therapy (OAD 75.2%, no insulin use) or premixed insulin, insulin (CT, IIT) or insulin (DBI, IIT).

4. RESULTS

Patient demographics are listed in table 1. Overall 42.6% have no comorbidities, while 23.6%, 18.3%, 8.3%, and 3.1% have 1, 2, 3, or >3 comorbidities. Patients with type 1 diabetes have an above 10% prevalence for neuropathy and retinopathy; for type 2 patients these are hypertension, dyslipidemia, neuropathy, obesity and retinopathy.

For all patients on drug therapy the Indian guideline recommends at least 1 test per day. In the OAD, BOT, CT and IIT groups 12.7, 13.6, 16.4 and 10.3% test at least once daily. For the IIT group the guideline recommends 3 tests per day; less than 2% of IIT treated patients included into this study test at the recommended test frequency.

An HbA1c goal of 8% is achieved by 62/49/45/37%, an HbA1c goal of 7% by 28/20/19/18% (OAD/BOT/CT/IIT). Figure 2 shows the HbA1c levels by different therapy segments and SMBG meter availability (OTHERS excluded).

1,180 patients (52.4%) have a meter for SMBG home-testing. However 151 (12.8%) of these report that they do not test at home. Figure 2 provides the share of testers by therapy group.

REFERENCEs

10. Ji L et al. Development of the 2nd half year 2013. PDS Diabetes is a syndicated research with a fixed representative panel of diabetes, cardiologists and GPs from larger Indian cities using a standardized documentation of cases. SMBG usage is analyzed by therapeutic subgroups: oral anti-diabetic therapy (OAD 75.2%, no insulin use), basal supported oral therapy (BOT 9.5%, OAD 75.2%, no insulin use), conventional oral anti-diabetic therapy (OAD 75.2%, no insulin use) or premixed insulin, insulin (CT, IIT) or insulin (DBI, IIT).

5. CONCLUSIONS

Many patients in this sample don’t achieve HbA1c-therapy-goals and many don’t test their blood glucose. Less than 1 in 5 patients performs the recommended test frequency. In IIT SMBG is needed to support insulin dose adjustments: only 1 in 50 tests enough. In CT patients the differences in HbA1c between testers and non-testers are largest. Lacking SMBG benefit in IIT treated patients might indicate the insufficiency of current testing. The new guideline might help to close these gaps. Further research is needed to monitor benefits resulting from the implementation of the Indian guideline on glucose monitoring in diabetes therapy.