

Improving DM control in General Out-Patient Clinics of Hong Kong West Cluster

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Introduction: DM is common in chronic disease management in General Out-patient Clinics (GOPCs). Improved control could significantly reduce long term mortality, morbidity, and burden to the health care system.

Objective: To look for factors causing suboptimal DM control in GOPC patients.

Methods: Data of DM patients from CDARS within the period 1/1/2019 to 31/3/2020, in all 6 GOPCs of Hong Kong West Cluster were extracted and analyzed. The patient load distribution as: Sai Ying Pun GOPC (35%), Aberdeen GOPC (35%), Ap Lei Chau GOPC (15%), Kennedy Town GOPC (7%), Central District GOPC (6%) and Tung Wah GOPC (2%). Majority of cases with unsatisfactory HbA1c (>7%) were ranged between 7-8.5% (24.6%). Cases seen within the Period A 1-31/3/2019 and Period B 1-31/3/2020 with HbA1c tested within 180 days were further analyzed. To produce 90% confidence level, 59 cases in Period A and 58 cases in Period B were randomly selected from 415 and 400 cases within the 2 periods respectively, and their medical records in CMS were analyzed.

Results: There was no significant difference in age and sex distribution of the patients. The HbA1c was a bell-shaped distribution peaked at 6-6.5% (24.3% of total cases) and 6.5-7% (27.4% of total cases). The HbA1c control rate ($\leq 7\%$), was not significantly difference within Q1-Q4 of 2019, but significantly improved from 70.4% to 76.8% in Q1 of 2020, (p value <0.0001). Most of the cases were on oral medications. The numbers of patients on maximum doses of metformin and gliclazide, or on insulin, were not significantly different. It was observed with increased alternative oral agent usage. i.e., DPP4, SGLT2, Actos, with the average number of oral agent usage increased from 2.03 (Period A) to 2.3 (Period B). Multiple factors associated with poor HbA1c control were identified. The major causes included suboptimal dose (Period A:51%, Period B: 67%), poor diet control (Period A:40%, Period B:40%), and patient refused for treatment (Period A:20%, Period B:29%). It was observed reduced poor drug compliance in Period B (Period A:17%, Period B:10%), and patient intolerance rate remained low in both periods (Period A:7%, Period B:7%).

Documented doctor's action against raised HbA1c in the records, included giving advice on diet and exercise, stepping up medicine, or referral to dietitian were increased from Period A 50.8% to Period B 60.3%. There were significantly reduced cases with suboptimal dosage without action from 56.6 % in Period A to 35.8% in Period B (p value <0.05). There was also improved blood pressure control rate to the target 130/80 mmHg, from 49.2% in Period A to 58.6% in Period B. (Reference range from HAHO 18Q2-19Q1 46.4%). There was also improved LDL cholesterol control rate to 2.6 mmol/L with DM, and 1.8 mmol/L with history of cardiovascular problems or stroke, with 75.9% in Period A to 81% in Period B. (Reference range from HAHO 18Q2-19Q1 74.8%).

Conclusion: Suboptimal dosage was a major cause of unsatisfactory DM control. The drug dosage could be further optimized due to low patient intolerance rate. Another major cause was poor diet compliance. Dietitian service and education materials could assist to improve diet control. Patient refusal to treatment could be improved with better rapport to patient and better understanding of patient's expectations. Drug compliance was improving. There was still room for BP control improvement.