Poorly controlled diabetes mellitus – the way forward

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Diabetes mellitus in Hong Kong

Age adjusted prevalence - 7.7% in 1990 to 8.5% in 1995

Elder population (more than 65 years old) have an even higher prevalence
Accounts for 30% to 40% of patients receiving renal dialysis in Hong Kong


among diabetic patients, 28.4% suffer from baseline diabetic retinopathy, and 5.7% is sight-threatening

- Tam TKW, Epidemiological study of diabetic retinopathy in a primary care setting in Hong Kong Hong Kong Med J Vol 11 No 6 December 2005
Aims of our study

To examine the characteristics of poorly controlled DM patients in a general outpatient clinic

To develop strategies to improve diabetic control in this group of patients
Inclusion criteria:
- DM Patients attending Yan Oi General Outpatient clinic and,
- from 1 November 2006 to 31 October 2007 and,
- Latest HbA1C > 9

Exclusion criterion:
- Newly diagnosed DM less than six months
Medical records of individual patients were reviewed for:

- demographic data
- non-pharmacological intervention received
- medication profile
- doctor’s intervention
- patients’ attitudes and compliance towards treatment
Results

A total of 439 patients were studied
Demographic Data
Age distribution of poorly controlled DM patients

Mean = 59.77  
Std. Dev. = 11.165  
N = 439
Sex distribution of poorly controlled DM patients

55% Male
45% Female
Duration of DM

![Histogram showing the number of DM patients by years since diagnosis. The x-axis represents the number of years since diagnosis, ranging from 0 to 50, and the y-axis shows the number of DM patients, ranging from 0 to 70. The histogram peaks around the 0-10 years mark, indicating a higher concentration of patients within this range.](attachment:chart.png)
Non-pharmacological Interventions Received
Diet advice

- 97% received dietary advice
- 3% did not receive dietary advice
Individual nurse counseling

- Received: 49%
- Not received: 51%

Legend:
- Gray: Individual nurse counseling received
- Teal: Individual nurse counseling not received
Specially organized DM education class

- Attended DM education class: 81%
- Not attended DM education class: 19%
Medication Profile
OHA

- 65% on maximum dosage of OHA
- 35% OHA dosage not yet maximized
Insulin Therapy

- 88% not on insulin
- 12% on insulin therapy
Doctors’ intervention
Adjustment of OHA if the patient is not on maximum dose of OHA

- Medication adjusted: 63%
- No change in medication: 37%
Offer insulin treatment when patient has been on maximum dose of OHA

- 31% insulin not offered
- 69% insulin offered

Legend:
- Turquoise: insulin offered
- Brown: insulin not offered
After knowing elevated HbA1C, follow up duration $\leq 8$ weeks

- 61% FU 8 weeks or less
- 39% FU more than 8 weeks
HbA1c checked for 2 or more times in the past 12 months
DM complication screening done yearly

- 91% DMCS done yearly
- 9% DMCS delayed
Patients’ Attitude
Patients defaulted more than 2 times

91%

9%

No

Yes
Comparison between insulin refusal and acceptance

- 40% Patients refused insulin
- 60% Patients accepted insulin
Discussion
Monitoring and complication screening

The majority of patients with poor DM control received

- Dietary advice
- Regular DM complication screening
Intervention

Intervention can be further intensified

**Non-pharmacological:**

- Refer to individual nurse counseling / specially organized DM education class
- **Doctors** need to be more active in educating and counseling
- may be the **only contact point** that is acceptable to these patients
Pharmacological:

- adjustment of OHA should be more actively considered
- insulin therapy should be more actively considered
  - Doctor factor
  - Patient factor
- genuine caring attitude, education and gentle encouragement → reduce patient’s fear and anxiety about insulin injection therapy
Limitations of the Study

- retrospective descriptive study
- data collected may not reflect the whole consultative process
- doctors may not document all consideration when making decision on choosing or not choosing intervention for individual patients
- patient’s factors that might influence the intervention that the doctor subsequently took may not be fully elicited or documented.
Poorly controlled diabetes mellitus presents a \textbf{challenge} to medical professionals. GOPC doctors are good at:
- regular monitoring DM control
- providing \textit{timely} DM complication screening
- offering \textit{dietary} advice
Intervention can be strengthened on detecting poor control

- closer monitoring
- adjustment of medications
- initiation of insulin therapy
- refer to individual nurse counselling / education class / endocrinologists if appropriate
Patient factors also important in improving diabetic control:
- Patient’s disease knowledge
- Attitudes towards treatment
- Compliance
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