

***Family Physician Corner***

## **Diabetes Disabilities**

Abeer Al-Saweer, MD\*

Diabetes is a notorious epidemic affecting different age groups and ethnicities. The fact that the absolute increase in incidence of diabetes among the elderly is alarming<sup>1</sup>. This increase in incidence adds to the traditional diabetes complications.

Disability affects about 20-50% of the diabetic population. Persons with diabetes are 2-3 times more likely to be disabled than non-diabetics<sup>1</sup>. This difference appears more vividly in the most severe forms of diabetes. Estimates of disability prevalence in diabetics are variant due to the diversity in disability measures<sup>2</sup>.

In this overview, certain areas of disability will be discussed including definition of disability, spectrum of disability, definition of diabetic disability, factors related to diabetic disabilities, interventions to decrease cognitive and functional decline in diabetics and barriers to management and future needs.

### **Definition of Disability**

Disability is defined in relation to its impact on the individual either functionally, medically, anatomically or emotionally<sup>3</sup>. The environment and the family situation in turn augment or decrement the effects of these factors.

In general, disability can be defined as limitation in performing socially defined roles such as self-care and work (Saad Nagi and Philip Wood)<sup>3</sup>.

### **Spectrum of Disability**

The spectrum of disability depends on many determinants including environmental, social and family factors. It in turn may affect the utilization of health care facilities, self-care, income levels and work dysfunction<sup>3</sup>.

### **Diabetes and Disability**

Diabetes is associated with disability through number of processes. Acute complications including acute hyperglycemia and hypoglycemia may lead to temporary impairment that is associated with physical and social limitations<sup>4</sup>.

\* Family Physician  
Sheikh Sabah Health Centre  
Directorate of Health Centres  
Ministry of Health  
Kingdom of Bahrain

Chronic complications like retinopathy, cardiovascular events, renal impairment and peripheral vascular disease constitute the major obstacles to the functionality of the diabetic individual<sup>4</sup>. These complications disable the diabetic individual live through functional and emotional impacts.

Less recognized diabetic complications are increased risk of cognitive decline including attention, concentration, visuospatial reasoning, memory and psychomotor speed. There is clear evidence that links diabetes to increase risk of dementia, Alzheimer's disease and depression<sup>5</sup>.

Having a rather hectic and complicated life style including multiple medications, frequent blood testing, dieting, and somewhat rigid timetable add up to the diabetic disability and environmental dysfunction.

The National Health Interview Survey (NHIS) has examined the level of disability in diabetics compared to non-diabetics<sup>3</sup>. It was found that diabetics are 2-3 times less able to walk ¼ mile, climb stairs and do house work than non-diabetics<sup>3</sup>.

Multiple factors are implicated in the pathogenesis of physical disability in diabetics. These include cardiovascular disease, obesity, stroke, visual impairment, peripheral nerve dysfunction, peripheral arterial disease, falls and depression<sup>5</sup>.

### **Factors related to disability in diabetics**

Disability in persons with diabetes is influenced by a number of factors either personal or diabetes related.

Personal factors: Activity limitation disability in diabetics is increased with increased age, female gender, diabetics with less education and those with lower socioeconomic status<sup>3</sup>.

Diabetes related factors: More activity limitation was noted in diabetics using insulin, and those with chronic complications<sup>5</sup>.

### **Interventions to reduce disabilities**

Aggressive management of hyperglycemia, blood pressure control, hyperlipidemia control, aspirin use, smoking cessation and regular screening of foot, eye, kidneys and cardiovascular system may prevent disabilities<sup>6</sup>.

Structured exercise programs of walking, strength and balance training are associated with improved physical abilities<sup>6</sup>.

Weight loss may improve physical capacity through decrease in mechanical problems as well as decrease in other diabetic complications<sup>7</sup>.

### **Barriers to disability management**

1. The heterogeneity of the diabetic population in which each individual has to have tailored anti disability program<sup>8</sup>.
2. Life expectancies are different making different strategies mandatory for each patient<sup>8</sup>.

3. Multiple drug regimens may constitute a barrier to the functional and physical abilities of the diabetic. Some medications may mask symptoms, impair cognition and cause urinary incontinence<sup>9</sup>.
4. Increased depression and unwillingness to live among diabetics may constitute an obstacle to disability management<sup>4</sup>.

### **Summary and Future recommendations**

Disability in diabetics is a growing problem with the increased number of diabetics and the increased life expectancies of diabetics. It is mandatory to anticipate and plan for the prevention of such disabilities. It is of great importance to organize our health care system in a way to deal with these disabilities.

Research, guideline development, proper diabetic setup, proper screening and prevention strategies are the messages necessary to be conveyed to the decision makers in order to prevent disabilities in diabetics.

### **REFERENCES**

1. Gregg EW, Beckles GLA, Williamson DF, et al. Diabetes and physical disability among older US adults. *Diabetes Care* 2000; 23:1272-7.
2. Gregg W, Brown A. Cognitive and Physical Disabilities and Aging-Related Complications of Diabetes. *Clinical Diabetes* 2003;21:113-8.
3. Songer TJ. Disability in Diabetes. In: *Diabetes in America*. 2<sup>nd</sup> edn. Washington DC: US Government Printing Office; NIH publication 95-1468, 1995:429-48.
4. Zgibor C, Songer TJ, Kelsey SF, et al. Influence of Health Care Providers on the Development of Diabetes Complications: Long-term follow-up from the Pittsburgh Epidemiology of Diabetes Complications Study. *Diabetes Care* 2002;25:1584-90.
5. Schwartz AV, Hillier TA, Sellmeyer DE, et al. Older Women with Diabetes have a Higher Risk of Falls: A prospective study. *Diabetes Care* 2002;25:1749-54.
6. Gregg EW, Beckles GL, Williamson DF, et al. Diabetes and physical disability among older US adults. *Diabetes Care* 2000; 23:1272-7.
7. Gregg EW, Mangione CM, Cauley JA, et al. Diabetes and Incidence of Functional Disability in Older Women. *Diabetes Care* 2002;25:61-7.
8. Volpato SL, Ferrucci, Blaum C, et al. Progression of Lower-Extremity Disability in Older Women with Diabetes: The Women's Health and Aging Study. *Diabetes Care* 2003;26:70-5.
9. Coonrod BA. Overcoming physical barriers to diabetes self-care: reframing disability as an opportunity for ingenuity. *Diabetes Spectrum* 2001;14:28-32.