Family Physician Corner

Mortality in Diabetics' Population - An Overview

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Mortality studies in general are criticized for its lack of precision in documentation and retrieval of information. Mortality data in diabetic population is scarce worldwide. Local and regional studies of mortality in diabetics are rare or literally non-existing. Many factors have contributed to the paucity of knowledge in this field. This paper describes statistics of mortality in diabetics in type 1 and type 2, the risk factors and common causes of death.

Mortality in Type 2 Diabetics (T2DM)

Diabetes is known to be under-reported in death certificates and therefore it is underestimated by national mortality statistics[1]. In 1986, it was estimated, in a sample of United States population that death due to Type 2 diabetes mellitus (T2DM) accounted for 17.2% of all deaths for those over twenty-five years[1]. The recording of diabetes as a cause of death in US cohort studies was 10-15% of all deaths[2]. The average annual death rate for diabetic white men and women in the USA is estimated to be 5%[2].

The age-adjusted death rate for diabetes or diabetes-related causes in the general population is increasing. This contrasts with the decline in age-adjusted death rate for diabetes and diabetes-related causes in the diabetic population[2].

Excess Mortality in T2DM

The increased risk of diabetes related mortality in T2DM population declines with increasing age and with increased age at onset of diabetes, which indicates that those who develop T2DM at younger ages have higher mortality risk, compared with non diabetic persons[3].

Mortality in the diabetic population – as in the general population - increases with age[3, 4].

The age-adjusted mortality in T2DM patients in USA is as twice as the general population. Adjustment for known risk factors does not; however, eliminate this excess mortality risk in the diabetic population [1,3, 4].

Life Expectancy in T2DM

Life expectancy is reduced by 5 to10 years in middle-aged T2DM populations. This

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reduction is more prevalent in women with diabetes than men and in those with complications[5].There is 5-10 year of life lost in T2DM compared to the general population. The number of years (5-10) lost varies with current age, age of onset of T2DM, sex, presence of risk factors and complications [5].

Causes of Death in T2DM

The four leading causes of death in T2DM are cardiovascular diseases, diabetes, malignant neoplasms, and cerebrovascular disease[5]. The leading cause of death in the diabetic population is ischemic heart disease accounting for 40% of death according to several US cohort studies[5,6,7]. The excess risk from cardiovascular death in diabetic population is notably seen in those with increased duration of diabetes, newly diagnosed and those on insulin therapy suggesting increased severity of diabetes [1].

Risk Factors and Clinical Markers for Excess Mortality

Patients with T2DM who have clinical risk markers and complications (e.g., microalbuminuria, retinopathy) appear to be particularly at higher risk of mortality, compared with those without[6].

Mortality in Type 1 Diabetes Mellitus (T1DM)

The trend of mortality in T1DM has changed dramatically after the introduction of insulin in the 1920s. Nevertheless, the age-adjusted mortality rates in T1DM remain to be high compared with the general population and other diabetic populations[8]. Type 1 diabetics are less likely to die before late adulthood or middle age in comparison to early death soon after diagnosis before the discovery of insulin. At the age of 40 years, type 1 diabetics have 20 times death chance compared to the general population. This high rate could be reduced with proper medical care[9].

Causes of Death in T1DM

The cause of death in T1DM patients varies with the duration of the disease. Coma dominates early years while renal and cardiovascular diseases prevail after 30 years of age [9]. Studies have demonstrated that achieving near-normal blood glucose level delays the progression of these morbidities[10, 11].

Risk Factors of mortality in T1DM

The risk factors for mortality in type 1 diabetics are somehow similar to the risk factors in general population. High blood pressure and smoking seem to hasten premature death in type 1 diabetic as in the general population. The association between high LDL level and mortality in type 1 diabetes cannot be ascertained[11].
There is an increased death preponderance of female type 1 compared with their male counterpart. The cause of death is mainly attributable to ischemic heart disease, which seems to be number one killer in both types of diabetes[11]. Interestingly, type 1 diabetics diagnosed before puberty seem to have better survival rate than those diagnosed around puberty[11].

CONCLUSION

The study of mortality in diabetics is jeopardized by lack of information in many aspects including registration, cause-specific diagnosis and distinction between different types of diabetes in death certificates. Diabetics are more at risk of all cause mortality than their peers in general population. Blood sugar control and careful follow up with specialized dedicated team will certainly decrease the risk of death.

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