Subject:

Continuous customized education via telemedicine: outcome data of events over 8 years

Abstract:

Aim:

Majority of complications in diabetes are preventable provided metabolic targets of therapy are maintained, without risk of hypoglycaemia. Education and counselling to be eventually successful should be periodic,customised for individual therapies ensuring drug compliance.We have earlier published the cost effectiveness of using Diabetes Tele Management System (DTMS®) in addressing individual concerns precluding the necessity of physical visits to hospital. DTMS® comprises of unique software and trained multi disciplinary team communicating with patients through telephone/email for slow steady titration of drugs combined with frequent tele counseling.The current study is a retrospective data of 2189 patients who are on regular DTMS® follow up from 2004 to 2012.

Methods:

Medical records of 9348 patients were analyzed and cohort of 2189 patients on regular follow up was deselected (age 56 ±12.7 years, 69% male). Regular follow up involved a minimum of 1 telephone/email follow up once a month with the multidisciplinary team and physical visit at least once in a year.Frequency of hospitalization, worsening of existing medical conditions, onset of new events, severe hypoglycemic episodes, new cases of cancer were captured and analyzed. Patients with advanced CKD were excluded from this study.All patients were on insulin ± OHAs along with statins and anti-hypertensives.

Results:

On analysis, HbA1c at 8 years was 7.6 ± 1.4%vs 8.9 ± 1.5%,BP was 136/86 vs 162/98 mmHg & average LDL 78 vs 186 mg/dl. 12.97% had history of diabetes >15 years & 23.45% <5 years. 4.12% had new onset diabetes. 72.29% had co-morbid conditions at baseline.3 expired and 3 new cases of neoplasm were reported.

The co-morbid states at the end of 8 years are summarized in Table 1.

System involvement due to co-morbidity At baseline At 8 years

Gastrointestinal disorders 11.64% 10.27%

Musculoskeletal and connective tissue disorders 27.12% 25.56%

Nervous system disorders 19.21% 21.41%

Renal and urinary disorders 13.87% 14.19%

Cardiovascular system disorders 14.21% 10.02%

Retinopathy (undergone laser therapy) 6.45% 6.43%

Severe Hypoglycemia requiring hospitalization 68.27% 13.28%

Respiratory, thoracic and mediastinal disorders 25.74% 28.82%

Conclusion:

Education modules and counselling administered via DTMS®periodically have significantly helped in the prevention of vascular complications of diabetes. The statistically insignificant new occurrence of micro vascular and macrovascular events in the 8 year follow up period points towards the acceptance of DTMS® as an efficient educational tool.

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