

Use of a Large Diabetes Electronic Medical Record System in India: Clinical and Research Applications

Rajendra Pradeepa, M.Sc., Ph.D.,^{1,2} Anbalagan Viknesh Prabu, M.B.B.S.,^{1,2}
Saravanan Jebarani, D.C.S.E.,^{1,2} Sivasankaran Subhashini, M.Tech.,^{1,2}
and Viswanathan Mohan, M.D., Ph.D., D.Sc., FRCP^{1,2}

Abstract

Background:

The diabetes electronic medical record (DEMR) has emerged as an effective information management tool with the potential to improve diabetes care and research. This study reports on the usefulness of the DEMR system at Dr. Mohan's Diabetes Specialities Centre (DMDSC), Chennai, India, for clinical and research purposes.

Methods:

The DEMR, set up in 1996 at DMDSC, connects data of nine centers/clinics in different geographical areas in Southern India. The present data analysis is based on a total of 226,228 patients registered in the DEMR system at DMDSC between the years 1991 and 2010.

Results:

The DEMR included data of 139,906 male and 86,322 female patients, of whom 92.6% had type 2 diabetes mellitus (T2DM), 1.4% had type 1 diabetes mellitus (T1DM), and the rest had other types. Patients with T2DM had higher prevalence rates of neuropathy (33.1% vs 13.0%, $p < .001$), microalbuminuria (25.5% vs 20.0%, $p < .001$), coronary artery disease (17.5% vs 9.2%, $p < .001$) and peripheral vascular disease (3.9% vs 2.8%, $p = .017$) compared with T1DM patients, while prevalence of diabetic retinopathy was similar (37.9% vs 35.7%, $p = .06$). Prevalence of microvascular and macrovascular complications of diabetes increased with increasing glycated hemoglobin levels (p for trend $< .001$) and increasing diabetes duration (p for trend $< .001$).

Conclusions:

The DEMR helps track diabetes care and is a valuable tool for research.

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Author Affiliations: ¹Madras Diabetes Research Foundation, Gopalapuram, Chennai, India; and ²Dr. Mohan's Diabetes Specialities Centre, WHO Collaborating Centre for Non-Communicable Diseases Prevention and Control, IDF Centre of Education, Gopalapuram, Chennai, India

Abbreviations: (ABI) ankle-brachial index, (BMI) body mass index, (CAD) coronary artery disease, (DEMR) diabetes electronic medical record, (DMDSC) Dr. Mohan's Diabetes Specialities Centre, (DR) diabetic retinopathy, (EMR) electronic medical record, (HbA1c) glycated hemoglobin, (PVD) peripheral vascular disease, (SQL) structured query language, (T1DM) type 1 diabetes mellitus, (T2DM) type 2 diabetes mellitus

Keywords: Asian Indians, complications, databases, diabetes, electronic medical records, India, South Asians

Corresponding Author: Viswanathan Mohan, M.D., Ph.D., D.Sc., FRCP, Madras Diabetes Research Foundation and Dr. Mohan's Diabetes Specialities Centre, 4, Conran Smith Road, Gopalapuram, Chennai 600 086, India; email address drmoahans@diabetes.india.in