Editorials

Diabetes outcomes in people with severe mental illness

NATIONAL DIABETES AUDIT

In March 2018, GPs in England and Wales should have received information on the quality of care experienced by their patients with diabetes based on the findings of the National Diabetes Audit (NDA).[1] The NDA is one of the largest comprehensive annual clinical audits in the world, integrating data from both primary and secondary care sources. For the first time, outcome data from the population that have diabetes will be presented comparing patients who also have a severe mental illness (SMI) with those that do not have an SMI. These patients will have been identified through their inclusion in the 'Mental Health' register in the Quality and Outcomes Framework (QOF) and typically include those with psychotic disorders and bipolar affective disorder.

PATIENTS WITH SEVERE MENTAL ILLNESS

Patients with SMI die 10–20 years earlier than those without SMI, and long-term conditions contribute substantially to the mortality gap.[2] The causes of this premature mortality are complex and inter-related: diabetes is 2–3 times more common among people with SMI than the general population;[3] antipsychotic medication is both obesogenic and diabetogenic;[4,5] antipsychotic medication is also thrombophilic[6] and up to 70% of people with schizophrenia smoke. People with SMI are more likely to be unemployed, have poor accommodation and require state benefits; the disabling nature of SMI makes it more difficult to adhere to medication regimens, to keep review appointments, to lose weight and take regular exercise[7] — all of which would improve health outcomes. Organisational barriers related to parallel services that do not integrate physical and medical care results in the most vulnerable patients falling between organisational 'nets'. Overall, the combination of diabetes with psychiatric comorbidities, medication side-effects, and organisational factors mean that it is hardly surprising that diabetes is one of the major causes of early death in this group.

THE NDA AND PATIENTS WITH SMI

Given this complex set of circumstances, it is perhaps surprising that no country in the world has a national data set on the quality of diabetic care received by people with SMI. This national primary care audit, of people living in the community with a diagnosis of diabetes and an SMI, therefore represents a unique and valuable dataset. Use of this data can help to understand the factors associated with the increased mortality and morbidity in this vulnerable group.

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The NDA as a national audit has been in progress for over 10 years and used by key opinion leaders to improve clinical practice. It audits the care of >95% of all people with diabetes. The audit records overall that there are over 60 000 people with type 2 diabetes and SMI, and 2500 with type 1 diabetes. There are fewer people with type 1 diabetes as it is a less common disease, making interpretion of the data more difficult.

The NDA confirms previous studies that type 2 diabetes is twice as common among people with SMI than in the general population. The rates of type 1 diabetes are about the same as the general population, although the overall numbers are small. The age distribution of both type 1 and type 2 is different in the SMI group: those with type 2 diabetes are more likely to develop the illness earlier than the general population, frequently in the fourth and fifth decades. Those with type 1 diabetes are more likely to develop the disorder later than those without an SMI, as late as the third and fourth decades of life.

ROLE OF DEPRIVATION

Deprivation plays a significant role in the link between diabetes and SMI. Whereas there is a small variation in prevalence of diabetes by deprivation quintile, this is much more marked among the group with SMI. So, in the most deprived quintile in the country, 35% of those with an SMI also have diabetes, compared to just 8% of those in the general population in the least deprived quintile.

RECOMMENDED CARE PROCESSES

The NDA reports on the proportion of people receiving the eight recommended care processes: checking HbA1c, cholesterol, serum creatinine, urine albumin, blood pressure, body mass index (BMI), smoking status, and foot surveillance. In the year 2016–2017, 40.6% of people with type 2 diabetes and SMI received all care processes compared to 47.6% of people with type 2 diabetes alone. In particular it is foot surveillance and urine albumen that are least likely to be completed in people with SMI. For people with type 1 diabetes, uptake of all eight care processes was similar in those with and without SMI (34.9% and 33.7%, respectively). It is interesting to note that deprivation does not appear to be associated with uptake of the eight care processes among those with type 1 diabetes.

TREATMENT TARGETS

The NDA also surveys the achievement of treatment targets in the care of diabetes; specifically, glucose control, blood pressure, and cholesterol, as set out in the NICE guidelines. There was no difference between patients with SMI and those without SMI with diabetes in achieving all three treatment targets. Deprivation played no role in achieving treatment targets. Smoking was associated with a slightly increased risk of not achieving all the treatment targets, but this was also true for those with diabetes alone.

However, a critical appraisal must be taken in interpreting these findings as they conflict with the peer reviewed literature. The increased morbidity and mortality from diabetes of this group is well documented, yet diabetic treatment target achievements were found to be no different to the general population in the NDA. Deprivation[7] is associated with increased rates of diabetes and SMI, yet deprivation appears to play no part in achieving care processes or treatment targets.

People with an SMI are known to smoke much more tobacco than those without an SMI.[8] Smoking induces liver enzymes that metabolise antipsychotic medication so to achieve the same clinical effect, it may be necessary to increase the dose of the antipsychotic medication in smokers, and

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sudden smoking cessation may precipitate a rise to toxic levels of drugs such as clozapine.[9] What the data in this audit doesn't provide is quantitative information on tobacco use, doses of antipsychotic medication, and the links to cardiovascular risk scores.

Cardiovascular risk assessment and the ability to predict the development of diabetes are clearly of value in identifying those most at risk for primary prevention. The QRISK3 tool[10] now includes SMI and antipsychotic medication as risk factors influencing overall cardiovascular risk**.** These variables are also included in the QDIABETES prediction tool.[10] Taken together, the NDA of SMI, the QRISK3 and QDIABETES tools offer clinicians real opportunities to improve care on an individual basis. A practice-based audit focusing on piloting innovations in interventions to reduce QRISK3 and QDIABETES scores of people with an SMI would be a useful exercise, especially when there is no national guidance on the management of cardiovascular risk in this group other than the rigorous application of general NICE guidelines.

DIABETES IN MENTAL HEALTH TRUSTS

Like all audits, the data is cross sectional, therefore the direction of causation cannot be inferred and does not describe the process of care over time. Subsequent analysis of the same data will compare the prevalence of diabetes complications in patients with SMI versus patients without SMI, but the results will not be available for another 12-18 months. The data relate only to people registered with a general practice as having SMI and therefore may be biased to those with less severe mental illness. We have no data on long-term residents in mental health institutions who also have diabetes. The NDA requires GPs to provide data, and all acute trusts provide data for the audit. Only mental health trusts do not provide data for the audit — and the studies that are available indicate that rates of diabetes and SMI are even higher in secondary care than in the community (up to 30%) and that achievement of treatment targets is worse.[11]

FUTURE NATIONAL AUDITS

The NDA has led the world in auditing diabetic care among those with SMI. Can this approach, of looking at the SMI subset of a national audit, be applied to other clinical areas? Certainly, there are national audits of chronic kidney disease, respiratory disease, and stroke. If these audits could include the subset of people with an SMI, or with SMI combined with additional morbidities, then we may begin to understand why this group has such poor health outcomes.

CONCLUSION

The NDA has provided data on what was considered to be a 'hard-to-reach' group. By including a group of people with poor health outcomes, it is has succeeded in highlighting health inequalities. It is setting a research agenda; asking questions about the role of deprivation and smoking in diabetes and SMI. The role of housing, employment, and social support in the management of diabetes and SMI needs further understanding as people tend to prioritise these before health. It is setting a development agenda — including the role of antipsychotic medication in the analysis of diabetic care, looking at complication rates of diabetes in people with SMI. It is setting clinical questions about providing preventative care for people with SMI — predicting the development of diabetes and assessing cardiovascular risk.

It would seem that the NDA results that have appeared on your desk are much more than just a set of boring figures!

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Provenance
Commissioned, externally peer reviewed.

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Competing interests
Khalida Ismail has received honoraria for educational lectures from Eli Lily, Janssen, Sanofi and Sunovion. Andrew Askey has received honoraria, speakers fees, and sponsorship for diabetes conferences from Eli Lily, Sanofi, Novo Nordisk, Janssen, Astra Zeneca, Takeda, MSD, and Boehringer Ingelheim. All other authors have declared no competing interests.

DOI: https://doi.org/10.3399/bjgp18X695381

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