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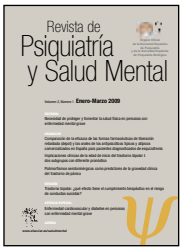

SPECIAL ARTICLE

Cardiovascular disease and diabetes in people with severe mental illness

Position statement from the European Psychiatric Association (EPA), supported by the European Association for the Study of Diabetes (EASD) and the European Society of Cardiology (ESC)

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Abstract
People with severe mental illnesses, such as schizophrenia, depression or bipolar disorder, have worse physical health and reduced life expectancy compared to the general population. The excess cardiovascular mortality associated with schizophrenia and bipolar disorder is attributed to an increased risk of the modifiable coronary heart disease risk factors, obesity, smoking, diabetes, hypertension, and dyslipidaemia. Antipsychotic medication and possibly other psychotropic medication like antidepressants can induce weight gain and further increase the risk of adverse metabolic effects which may result in further increased incidence of cardiovascular disease. Patients have limited access to general healthcare with less opportunity for cardiovascular risk screening and prevention than would be expected in a non-psychiatric population.
The European Psychiatric Association (EPA), supported by the European Association for the Study of Diabetes (EASD) and the European Society of Cardiology (ESC) published this statement aiming to improve the care of patients suffering from severe mental illness. The intention is to initiate co-operation and shared care between the different health care professionals and to increase the awareness of psychiatrists caring for patients

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suffering from severe mental illness to screen and treat increased cardiovascular risk factors and diabetes.

PALABRAS CLAVE
Enfermedad mental grave;
Esquizofrenia;
Depresión;
Trastorno bipolar;
Salud física;
Aumento de peso;
Enfermedad cardiovascular;
Diabetes

Enfermedad cardiovascular y diabetes en personas con enfermedad mental grave

Resumen
Comparativamente con la población general, la salud física de las personas con enfermedades mentales graves, como la esquizofrenia, la depresión o el trastorno bipolar, es peor y su esperanza de vida, menor. La mayor mortalidad cardiovascular en relación con la esquizofrenia y el trastorno bipolar se atribuye a un riesgo mayor de presentar factores de riesgo coronario modificables, obesidad, tabaquismo, diabetes, hipertensión y dislipemia. La medicación antipsicótica y, posiblemente, otros tipos de psicofármacos, como los antidepresivos, pueden inducir un aumento de peso y un riesgo mayor de efectos metabólicos adversos que incrementan la incidencia de enfermedades cardiovasculares. El acceso de estos pacientes a la atención sanitaria general es limitado y sus oportunidades de cribado y prevención del riesgo cardiovascular son menores que las esperables para la población no psiquiátrica.
La Asociación Psiquiátrica Europea (EPA), respaldada por la Asociación Europea para el Estudio de la Diabetes (EASD) y la Sociedad Europea de Cardiología (ESC), ha publicado esta declaración con el ánimo de mejorar la atención de los pacientes que sufren enfermedades mentales graves. Se pretende iniciar una cooperación y una atención conjunta entre los distintos profesionales sanitarios, así como mejorar la conciencia de los psiquiatras que atienden a enfermos mentales graves respecto a la detección sistemática y el tratamiento de esta mayor incidencia de factores de riesgo cardiovascular y de diabetes.

Introduction

People with severe mental illnesses (SMI), such as schizophrenia, depression or bipolar disorder, have worse physical health and reduced life expectancy compared to the general population.[46,63,89] Evidence shows that they have a 2-3 fold increased mortality rate and that the mortality gap associated with mental illness compared to the general population has widened in recent decades.[82] This excess mortality is not only due to suicide; people with severe mental illness have a substantial risk of dying from cardiovascular disease (CVD).[15,19,21,52,77,78] They are more likely to be overweight, to smoke and to have diabetes, hypertension and dyslipidaemia.[24] Antipsychotic medication can induce weight gain and can further increase the risk of adverse metabolic effects which may result in further increased incidence of cardiovascular disease.[4,41,49,51,73,74,84,85,87,93] There is emerging evidence that there is an increase of modifiable cardiovascular risk factors in patients with bipolar disorders and in those with a history of depression and/or taking drugs to treat depression.[6,10,20,30,54,58,81,83,96,97]. The data base concerning the respective risks of medications used in the treatments of unipolar or bipolar depression, such as antidepressants or mood stabilisers, is currently not as comprehensive as for antipsychotics.[99]

Despite the increased risks, many of these patients have limited access to general healthcare with less opportunity for cardiovascular risk screening and prevention than would be expected in a non-psychiatric population.[40,46,63,64] Low rates of treatment for hypertension, dyslipidaemia and diabetes have been reported in schizophrenia patients.[70] Lack of consensus over who should take responsibility for the general healthcare needs of mental health patients has resulted in a continuing failure to provide appropriate services.

Psychiatrists should play an active role in ensuring that patients with mental illness are not disadvantaged. Measures should include the assessment and management of cardiovascular risk factors and diabetes as part of the care of their psychiatric patients. If necessary, shared care with cardiologists, diabetologists, specialist nurses or other specialists should be established.

The aim of the joint statement of EPA, EASD and ESC is to reduce cardiovascular risk and to improve diabetes care in patients suffering from severe mental illness and to reduce the burden on patients, their families and healthcare

services and to improve the overall health and well-being of the patients.

Based on a review of evidence that patients with severe mental illness are at increased risk of cardiovascular disease and diabetes, this position statement has been developed by the European Psychiatric Association (EPA) in consultation with the European Association for the Study of Diabetes (EASD) and the European Society of Cardiology (ESC). The statement is based upon the guidelines of ESC and EASD.[47]

Who is at risk and why?

Epidemiological studies have consistently shown excess CV mortality in patients with schizophrenia, bipolar disorder and depression.[6,14,15,19,21,26,62,77,78,81,89] In a recent meta-analysis of 37 studies carried out in 25 countries, with an estimated total of nearly 23,000 deaths, schizophrenia patients had a median all-cause standardised mortality rate (SMR) of 2.58 (2.41 for all natural causes, 7.5 for all unnatural causes).[82]. The median SMR for CVD was 1.79. The median all-cause SMRs for the 1970s, 1980s, and 1990s were 1.84, 2.98, and 3.20, respectively, suggesting an increasing mortality gap in recent decades.

Similar findings have been reported in large studies of patients with affective disorders with an overall SMR ranging from 1.23 to 2.50.[6] In a sub-set of 400 patients with unipolar depression or bipolar disorder followed up for 34-38 years, the SMR for coronary heart disease (CHD) was 1.61. Women were particularly at risk of CHD (SMR 1.7), while men showed increased cerebrovascular and vascular mortality (SMR 2.21). Data from the Baltimore Maryland Epidemiological Catchment Area Study, a 13 years follow-up study of a representative US community sample assessed for common psychiatric illness point to increased odds ratios for type 2 diabetes (OR = 2.2) and myocardial infarction (OR = 4.5) in depressed patients.[45] The association between depression and diabetes is complex and there is evidence that the association is bidirectional.[54]

The excess CV mortality associated with schizophrenia, unipolar and bipolar disorder is widely attributed to the 1-5 fold relative risk of the modifiable CHD risk factors, obesity, smoking, diabetes, hypertension, and dyslipidaemia, in this group of patients compared with the general public (table 1).[4,7,12,14,15,28,31,33,57,73,74,84,85,87,93] Interestingly also a dysregulation of the hypothalamic-pituitary adrenal axis (HPAA), very often found especially in depression,[53] and immunological alterations, prevalent in depression and schizophrenia seem to be involved in the pathogenesis.[80] These findings give some ideas, in which ways factors associated with the psychiatric diseases itself might contribute to the pathogenesis of increased cardiovascular risk. Increased intra-abdominal fat deposition as opposed to subcutaneous fat has emerged as a strong and independent risk factor for the development of diabetes II and cardiovascular risk[60,79] and has been found even in drug naive patients in some studies.[91] The latter findings underline the importance of possible metabolic alteration before the influence of psychopharmacological treatment.

In the USA, 68% of 689 schizophrenia patients who took part in the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) study were smokers compared to 35% of age matched controls, 13% had diabetes vs 3% of controls and 27% vs 17% had hypertension.[48] Schizophrenia patients also had significantly lower HDL-cholesterol (HDL-C) levels, yet 88% of patients with dyslipidaemia were receiving no treatment. A total of 62% of hypertensive patients and 38% of those with diabetes also received no treatment.[70] Approximately one third of patients in CATIE had a constellation of cardiometabolic risk factors at baseline.[69] An increased risk of overweight, obesity and diabetes mellitus type 2 has also been found in clinical populations with affective disorders.[26,55,65,90] The high rate of under treatment of cardiovascular risk factors was recently confirmed in Europe, in a study of 2,463 schizophrenia patients from 12 European countries.[37] Overall, 10.9% of patients were being treated for arterial hypertension, 7.1% for a lipid disorder, 0.3% for type 1 diabetes and 3.5% for type 2 diabetes. However, a further 26% of untreated patients had biochemical evidence of abnormal glucose levels and 70% had evidence of dyslipidaemia. In 39% hypertension was not treated.

An unhealthy lifestyle, including poor diet and sedentary behaviour, is likely to contribute to the adverse risk profile of people with severe mental illness. But, given the weight gain and other metabolic abnormalities associated with some second-generation antipsychotic agents (SGAs), it has been difficult to differentiate the contribution of psychiatric conditions per se to increased CV risk.[4,73,74,84,85,87,93]

A large, ongoing, prospective study has confirmed that many schizophrenia patients already have significant levels of metabolic abnormalities at the time of their first episode of illness,[35] with the prevalence of diabetes increasing from 3% in first episode and recent-onset patients to 16.5% in patients with a duration of illness of more then 20 years. At first episode 27% of patients had raised cholesterol, rising to 61% in patients with a long duration of illness.

Data were analysed by age of patients and compared with those for the general population. In the age-band 15-25, diabetes was five times more common in patients with schizophrenia compared to the general population.

TABLE 1 **Estimated prevalence and RR of modifiable cardiovascular disease risk factors in schizophrenia and bipolar disorder compared to the general population[28]**

Modifiable risk factors	Schizophrenia	Bipolar Disorder
Obesity	45–55; RR: 1.5–2	21–49; RR: 1–2
Smoking	50–80; RR: 2–3	54%-68; RR: 2–3
Diabetes	10–15; RR: 2	8–17; RR: 1.5–2
Hypertension	19–58; RR: 2–3	35–61; RR: 2–3
Dyslipidemia	25-69; RR: ≤ 5	23-38; RR: ≤ 3
Metabolic syndrome	37–63; RR: 2–3	30–49; RR: 1.5–2

RR = relative risk.

With increasing age, the absolute difference between patients and the general population dramatically and linearly increased from 1.6%in the 15-25 age-band to 19.2% in the oldest age-band. The prevalence of diabetes per age-band was 4-5 times higher in schizophrenia patients than in the general population.

A growing body of evidence therefore supports the hypothesis that metabolic abnormalities are an inherent part of schizophrenic illness, with socioeconomic factors and possibly underlying genetic or biological factors playing a role.[74,84,85,87,93] In addition, there appears to be a direct effect of the illness and/or antipsychotic medication on the ongoing development of cardiometabolic risk factors.[84,85,87,93]

Psychopharmacological treatment and CV risk

Psychopharmacological treatment with antipsychotics, antidepressants and mood stabilisers is effective and a necessary component of the management of severe mental disorders like schizophrenic and affective disorders. The probability and extent of weight gain and related cardiovascular risk factors associated with psychopharmacological treatment differ substantially between classes of drugs, but also between subjects taking the same medication. Little is known about individual predictors of weight gain induced by psychopharmacological treatment.

Mechanisms of weight increase associated with psychopharmacological treatment have not been fully understood.[58,61,69,99] These include disease related factors (changes in the metabolic rate, appetite changes), drug related factors (impact of drugs on serotonergic, histaminergic and noradrenergic transmission) and improvement related factors (dietary changes, changes in physical activity).

Weight change during acute and maintenance treatment of schizophrenia and affective disorders is a frequent side effect of antipsychotics, antidepressants and mood stabilisers, well known since long-time.[2,9,13,88] While there are some empirical data on the risk of antidepressants and mood stabilisers inducing weight gain, the literature regarding the association between antidepressants or mood stabilisers and cardiovascular risk is sparse. Among the antidepressants, tricyclic agents (most notably amitryptiline and doxepine), mitrazepine and paroxetine seem to be associated with a higher risk of weight gain.[88]

The adverse effects of antipsychotics on metabolic parameters have been widely reported and discussed with a special focus on some commonly used second generation antipsychotics (SGAs).[2,4,41,49,74,75,84,85,86,93]

In a recent study on different cardiometabolic risk factors in patients diagnosed with schizophrenia from 2000-2006 compared to 1984-1995, those treated with SGAs for three years gained twice as much weight and showed greater deterioration in triglyceride and glucose levels than those treated with first generation antipsychotic drugs for three years.[38]

The mechanism by which SGAs increase CV risk is likely to be complex, but it appears that some receptor systems affected by SGAs may play a greater role in weight gain and the development of metabolic abnormalities than others.[4,71,74,75,84,85,87,94,95]

In CATIE, some antipsychotic agents were associated with more significant adverse effects on weight, lipids, and glucose metabolism than others.[33,48] The recently published EUFEST study of 498 European first episode schizophrenia patients also showed that some SGAs were associated with larger weight increases than others.[56]

These results support data from an earlier meta-analysis of weight change after 10 weeks of treatment at a standard dose of commonly used antipsychotic agents which showed a mean increase of 4.45kg with clozapine, 4.15kg with olanzapine, 2.1kg with risperidone.[2] This compares with weight gain of 0.04 kg with ziprasidone and less than 1kg with aripiprazole and amisulpride.[2,71,74,75,84,85,87,93] It should be underlined that in the meta-analysis by Allison[2] also some of the first generation antipsychotics (FGAs or neuroleptics) like e.g. chlorpromazine show a comparably high risk of inducing weight gain, and it has already been stated in older psychopharmacology textbooks that some neuroleptics have diabetogenic properties. However, there is much more data available for SGAs. Early weight gain (> 7%body weight within the first six weeks of olanzapine treatment) appears to be a good predictor of subsequent significant weight gain.[59] The likelihood of an increase in body weight of 7%is different with commonly used SGAs.[24] A recent review on weight and other metabolic changes on all second generations antipsychotics did not find evidence for a relationship with dose.[86]

An extensive review of metabolic data for SGAs has confirmed that clozapine and olanzapine treatment is associated with the greatest risk of clinically significant weight gain and ziprasidone and aripiprazole with minimal mean weight gain and lowest risk of more significant increases.[74] Clozapine and olanzapine were also associated with an increased risk of diabetes and dyslipidaemia.

Outcome data showing that differences in weight gain and risk of diabetes and dyslipidaemia with different SGA are associated with effects on hard endpoints, such as mortality or non-fatal cardiovascular disease, are not yet available.

Growing evidence suggests that children and adolescents who take antipsychotic medication are at higher risk of weight gain and metabolic effects than adults who use the same drugs.[29,61]

Over recent years both national and international groups have developed screening and monitoring guidelines[4,8,23,25,34,39,67,94] but these have not made their way to routine clinical care for patients,[16,19,64,73] although they appear to be cost-effective.[17] The most recent NICE schizophrenia guidelines include the need for comprehensive physical health monitoring and involvement of general practitioners.[76] Some recent diabetes guidelines have included patients with schizophrenia and antipsychotic use as risk factors for diabetes.[1,18]

Assessment of risk

The European Guidelines on CVD prevention recommend that people with known CVD, type 2 diabetes or type 1 diabetes with microalbuminuria or with very high levels of

individual risk factors should automatically have all their risk factors actively managed.[47]

For other people, the Guidelines recommend that risk factors should be managed according to overall risk, as assessed by the SCORE risk charts which calculate risk according to age, sex, smoking habit, systolic blood pressure and total cholesterol.[47] These charts focus risk management on men over 50 and women over 55.

Recent evidence suggests that patients with severe mental illness are typically younger, have higher blood pressure and are more likely to be smokers than the populations used to derive CV risk scoring systems, such as Framingham and SCORE, and there is a need to validate a risk score for this specific population of mentally ill patients.[7,15,27,33,92]

To ensure that younger patients at high CV risk compared to others the same age do not miss out on treatment, the European Guidelines on CVD prevention include a relative risk chart which bases total risk on smoking habit, systolic blood pressure and total cholesterol (fig. 1).

In the current absence of a risk scoring system for people with severe mental illness[92] and given the excess CV mortality in people with serious mental illness outlined earlier, we recommend that the decision to manage CV risk factors in this group of patients should be based on relative risk, as shown in figure 1. Where individual risk factors are markedly raised, there may also be a need to manage these on an individual basis.

As obesity and metabolic abnormalities are increasingly being seen at a younger age and children and adolescents who take antipsychotic medication are at particularly high risk,[29,61] we recommend close monitoring of risk factors such as weight and lipid levels in this group, with appropriate dietary, lifestyle and therapeutic intervention, in line with recent paediatric guidance.[32]

Which test and when?

CV risk assessment in the general population is usually carried out within a primary care setting. But patients with serious mental health problems frequently have poor access to general healthcare services. However, it has recently been shown that annual screening for CVD and metabolic disorders in patients with severe mental illness can be cost effective, owing to the reduction in costs of treating the complications of diabetes.[47]

Psychiatrists are often best placed to coordinate CV risk assessment and management, ideally as part of shared care arrangements with general and specialist healthcare services.

It is particularly important to establish baseline CV risk at initial presentation so that any subsequent change during treatment can be monitored.

The medical history and examination should therefore include:

- —History of previous CVD, diabetes or other related disease
- —Family history of premature CVD, diabetes or other related disease
- —Smoking habit

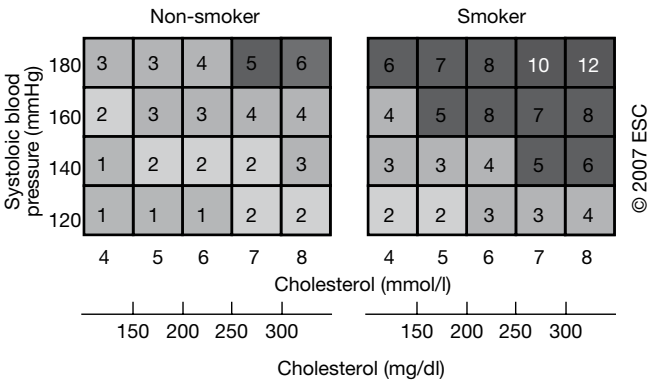

Figure 1 Relative Risk Chart.[47]

- —Weight and height in order to calculate body mass index (BMI), and/or waist circumference
- —Fasting blood glucose
- —Fasting blood lipids: total cholesterol, triglycerides, LDL-cholesterol (by calculation), and HDL-cholesterol
- —Blood pressure (measured twice and average taken), heart rate, heart and lung auscultation, foot pulses
- —ECG

Normal and abnormal values for fasting blood glucose, fasting blood lipids and blood pressure are provided in table 2.

It is recommended that measurements should be taken at initial presentation/first prescription of antipsychotic medication (fig. 2). The frequency with which tests are repeated is likely to depend on the patient's medical history and baseline risk factor values. In patients with diabetes level of glucose control needs to be tested regularly (approximately every three months).[3]

For patients with normal baseline tests, it is recommended that measurements be made at 6 weeks and 12 weeks after initiation of treatment and at least annually thereafter. The frequency of testing will depend on the presence of risk factors and detected abnormalities.

Management of CV risk factors

The recommended interventions for management of CV risk factors are summarised in figure 2.

Smoking habit

Smokers should be encouraged to stop smoking all forms of tobacco. Those who demonstrate a readiness to quit can be referred to a smoking cessation service which can offer behavioural counselling, nicotine replacement therapy and/or pharmacological intervention.

Practical experience has shown that discouraging patients and healthcare staff from smoking on psychiatric wards and at clinics is a useful first step towards smoking cessation or reduction.

Body weight

Maintaining a healthy body weight is the master key to reduced CV risk and prompt action is needed in patients

TABLE 2 **Abnormal values for major measurable CV risk factors**[47,98]

Abnormal value	
Fasting blood glucose	Impaired fasting glucose: Between 6.1 and 7mmol/l (110–125mg/dl)
	Diabetes: ≥ 7.0mmol/l (126 mg/dl)
Lipids	
Total cholesterol	Without diabetes: > 5mmol/l (190 mg/dl)
	With diabetes: > 4.5mmol/l (175mg/dl)
LDL-cholesterol	Without diabetes: > 3mmol/l (115mg/dl)
	With diabetes: > 2.5mmol/l (100mg/dl)
Blood pressure	Without diabetes: > 140/90mm Hg
	With diabetes > 130/80mm Hg

who are overweight at initial assessment or who show signs of early weight gain with anti-psychotic medication.

Patients should be advised to lose weight if they have:

—BMI > 25kg/m^2 (especially if it is > 30kg/m^2)
—Waist circumference > 88cm in women or > 102cm in men

Lifestyle advice/support can include information about the importance of healthy eating and regular exercise.[47]

Patients should also be advised to take 30 minutes of moderately vigorous activity — at least a brisk walk — on most days of the week. Referral to a nutritionist/dietician/personal trainer or lifestyle programme could be considered.[43,44]

Diabetes and fasting blood glucose

The World Health Organisation defined diabetes as a fasting plasma glucose of > 7mmol/l (126mg/dl).[4,18,42,98] Diagnosis should be confirmed with the second fasting measurement on another day. The measurement of HbA_{1c} may be used in the future for diagnosing diabetes.

In all forms of diabetes inadequate control of glycaemia will result in complications of diabetes. These complications include diabetic neuropathy, diabetic retinopathy, diabetic kidney disease and an increased risk of infection. The goal of metabolic control should be to achieve HbA_{1c} levels below 7%of total haemoglobin.

Patients with type 2 diabetes are likely to require additional pharmacological management, for which guidelines are available from the European Association for the Study of Diabetes (EASD) and the American Diabetes Association (ADA).[3,72]

Psychiatric centres should co-operate with diabetes centres to establish shared care of patients with mental illness and diabetes. For patients who require insulin treatment a teaching nurse from a diabetes centre should be available upon request for patients in psychiatry units.

Patients with diagnosed diabetes should be seen by a physician and/or a diabetes nurse regularly and as required depending on the therapy used. Fasting blood glucose and HbA1c should be measured regularly (approximately every three to six months). An annual examination should include measurement of CV risk factors, urinary albumin excretion and serum creatinine, an eye examination, including fundus examination, and foot examination to diagnose early signs of complications.[3]

Insulin treatment should be initiated and monitored by diabetes specialists. Special attention should be given to the prevention of hypoglycaemia in patients on insulin treatment. Avoidance of hypoglycaemia is best achieved by involving the patients' entourage in the education process about the risks and consequences of hypoglycaemia. Education of the patients on insulin should include blood glucose monitoring and the adaptation of the insulin doses based upon the values.

Patients with impaired fasting glucose, defined by the WHO as fasting glucose between 6.1mmol/l and 7mmol/l (110-125mg/dl), have high risk of diabetes and increased risk of CVD. Annual monitoring of glucose level and CV risk profile is advised.[3,42,98] In the presence of different CV risk factors in people with SMI closer monitoring should be considered.

Fasting blood lipids

Management of elevated fasting lipid levels should be carried out on the basis of total CV risk assessment (fig. 1).

Target levels of total cholesterol and LDL-cholesterol are <5 mmol/l (l90mg/dl) and < 3mmol/l (115mg/dl) respectively. More rigorous goals of < 4.5mmol/L (175mg/dl) and < 2.5mmol/l (l00mg/dl) are recommended for patients with established CV disease or diabetes (table 2).

Patients should be encouraged to eat lean meat, fish and low fat dairy products and to replace saturated fat with monounsaturated and polyunsaturated fats from vegetable and marine sources.[47] Those with mildly elevated cholesterol levels may be able to reach target levels through diet alone, while others are likely to require lipid lowering therapy, usually with statins.

Statin treatment has been demonstrated to be effective in the management of dyslipidaemia in patients with severe mental illness.[36,50] Psychiatrists who are involved in ongoing lipid management should be aware of the need for liver function and creatinine kinase tests.

It has been proven that patients with a high risk of cardiovascular disease benefit from statins despite normal values of blood lipids. Therefore statins may even be indicated in patients with normal lipid values.

Blood pressure

High blood pressure in severely mentally ill patients is often missed. Target blood pressure levels of < 140/90mm Hg are recommended.

Lifestyle changes, such as stopping smoking, reducing salt intake, weight reduction and increased exercise, may be sufficient to reduce mildly elevated blood pressure,

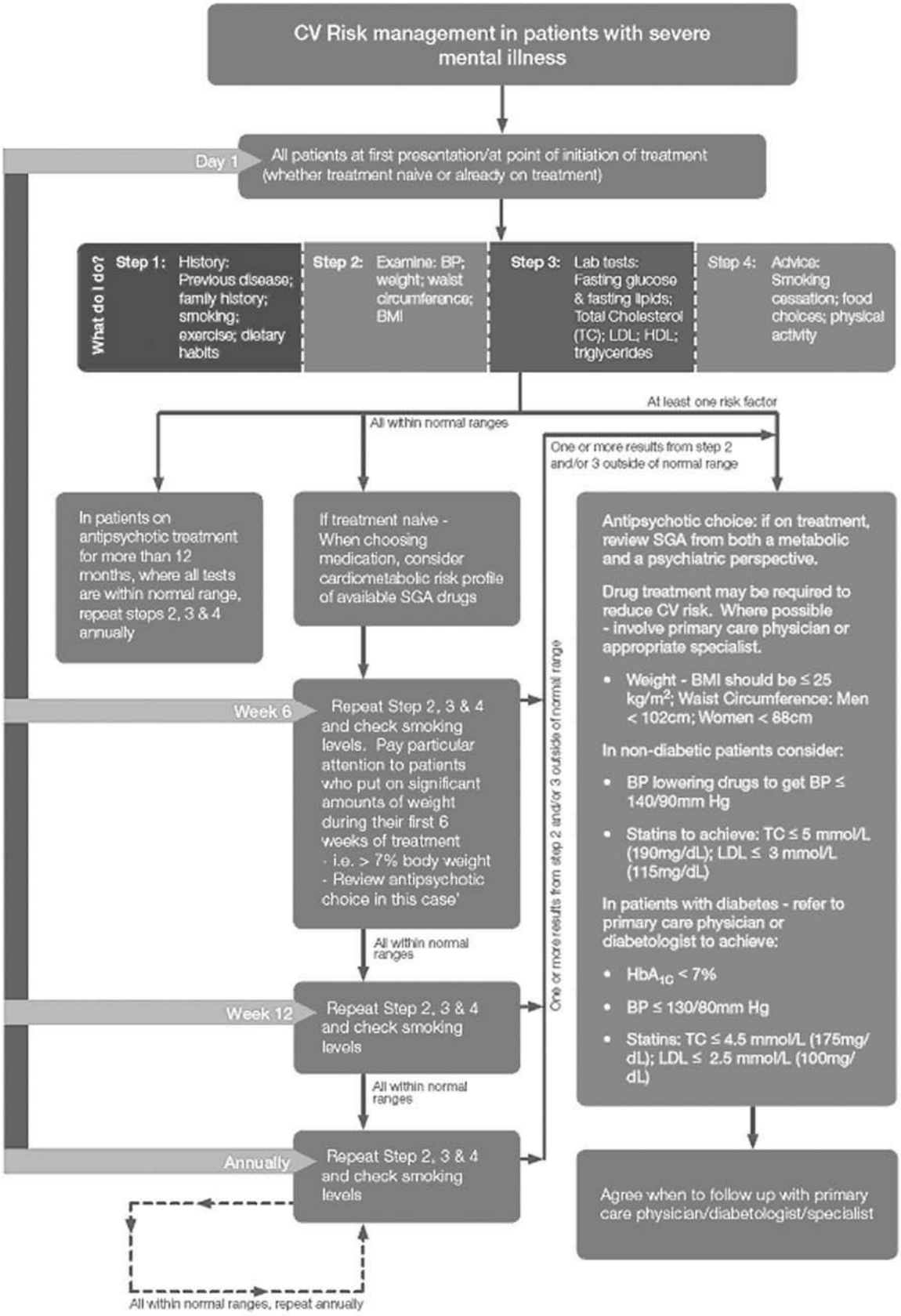

Figure 2 CV risk management in people with severe mental illness. HbA_{1c}: glycated hemoglobin; HDL: high-density lipoprotein; LDL: low-density lipoprotein; SGA: second generation antipsychotics.

although some patients are likely to require pharmacological therapy. Recently updated European guidelines stress the importance of choosing antihypertensive agents best suited to individual patient's needs.[47,66]

Management of adverse SGA-related effects on CV risk factors

Choice of antipsychotic medication should take account of potential effects of different agents on CV risk factors, such as weight and blood sugar and lipid profiles, especially in patients who are overweight and/or found to have other CV risk factors. Clinical decision making is always complex and has to consider efficacy aspects as well. A dilemma which might arise shall be demonstrated using clozapine as an example: clozapine is recommended by nearly all guidelines as the antipsychotic with the best results in treatment of refractory schizophrenia patients. However, it belongs to those SGAs with the highest risk of weight gain and related CV risk factors.

Summary and conclusion

The European Psychiatric Association (EPA) supported by the European Association for the Study of Diabetes (EASD) and the European Society of Cardiology (ESC) published this statement aiming to improve the care of patients suffering from severe mental illness. The intention is to initiate co-operation and shared care between the different health care professionals and to increase the awareness of psychiatrists caring for patients suffering from severe mental illness to screen and treat increased cardiovascular risk factors and diabetes.

In addition, the academic Associations involved with this statement point out that more research is required concerning the cardiovascular problems of people with severe mental illness and their treatment.

Acknowledgement

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Conflict of interest

Prof Dr De Hert has been a consultant for, received grant/research support and honoraria from, and been on the speakers/advisory boards of Astra Zeneca, Lundbeck JA, Janssen-Cilag, Eli Lilly, Pfizer, Sanofi and Bristol-Myers Squibb.

Dr Kahl received honoraria from Astra Zeneca, Eli Lilly, Janssen-Cilag, Bristol-Myers Squibb, Otsuka and Wyeth.

Prof Dr Möller has received grants or is a consultant for and on the speakership bureaus of Astra Zeneca, Bristol-Myers Squibb, Eisai, Eli Lilly, GlaxoSmithKline, Janssen Cilag, Lundbeck, Merck, Novartis, Organon, Pfizer, Sanofi-Aventis, Sepracor, Servier and Wyeth.

J Dekker has received grants and honoraria from Astra Zeneca, Bayer, Merck & Co Inc, Novartis, Novo Nordisk, and Pfizer.

Prof Wood has received unrestricted educational grants from, served on advisory boards of or/and given invited lectures for AstraZeneca, Bristol-Myers Squibb, Glaxo SmithKline, Merck Sharp & Dohme, Pfizer, Sanofi-Aventis, Schering Plough, Servier Laboratories and Sun Pharma, India.

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