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Letter to the Editor (Case report)

Red Yeast Rice for a patient with olanzapine-induced dyslipidemia: A test-and-retest case report

1. Introduction

Second-generation antipsychotic agents, including olanzapine, have been reported to induce dyslipidemia (Osser et al., 1999; Newcomer, 2005; Meyer and Koro, 2004; Su et al., 2005). Dyslipidemia in patients with schizophrenia should be taken seriously since patients suffering from psychotic illness tend to have multiple risk factors for cardiovascular events, such as smoking, a sedentary lifestyle, diabetes mellitus and obesity (Zimmermann et al., 2003). It has been recommended that patients with persistent dyslipidemia induced by antipsychotic treatment be switched to a less offending agent, if possible (Su et al., 2005; Meyer and Koro, 2004), or be referred for lipid-lowering therapy (Meyer and Koro, 2004). There are no standard guidelines, however, as to how patients with antipsychotic-induced dyslipidemia should be treated.

Red Yeast Rice has been used as nutritional therapy in dyslipidemia and has shown significant effect in reducing the levels of low-density lipoprotein cholesterol (LDL-C), total cholesterol, triglyceride and apolipoprotein B (Lin et al., 2005). Here, we report on a patient with schizophrenia with olanzapine-induced dyslipidemia, whose lipid profile responded well to Red Yeast Rice treatment in a test-and-retest treatment trial.

2. Case report

Mr. A, a 34-year-old man with a 3-year diagnosis of schizophrenia, had been treated with risperidone 3 mg/day for 6 months when he first came to our clinic. At the time of referral, Mr. A was overweight (89 kg in weight and 180 cm in height), but medical history and physical examination were unremarkable. Total cholesterol was 217 mg/dl, triglycerides 241 mg/dl, HDL cholesterol 30.5 mg/dl, LDL cholesterol 129.6 mg/dl. Liver function tests were: ALT=40 IU/l and AST=29 IU/l. Because of prominent negative symptoms and a deterioration in function, Mr. A was switched to olanzapine 10 mg/day and gradually improved. After 3 months of olanzapine treatment, he had gained 1 kg and had developed hyperlipidemia, with fasting serum levels of 211 mg/dl total cholesterol, triglycerides, 414 mg/dl, LDL 101.1 mg/dl and HDL, 25.7 mg/dl of HDL. His liver function had become abnormal, ALT=100 IU/l and AST=46 IU/l. He showed poor compliance with dietary and exercise management. His abnormal lipid panel persisted after 6 months of olanzapine treatment. Total cholesterol was now 208 mg/dl triglycerides, 324 mg/dl, triglycerides, LDL, 129.5 mg/dl, and HDL, 27.7 mg/dl. Mr. A was reluctant to take any lipid-lowering agent but agreed to take Red Yeast Rice. He was subsequently prescribed LipoCol Forte 1200 mg/day (Y&B Pharmaceuticals co., Ltd, Taipei, Taiwan). The composition of LipoCol Forte is shown in Table 1.

After 4 weeks of Red Yeast Rice treatment, the patient's lipid profile and liver function improved. Total cholesterol was 146 mg/dl, triglycerides, 161 mg/dl, LDL, 94.3 mg/dl, HDL, 24.0 mg/dl, ALT, 64 IU/l, and AST, 35 IU/l. In addition, he lost 1 kg of weight. Unfortunately, he discontinued Red Yeast Rice and, five weeks later, his lipid profile gain deteriorated. Triglycerides rose to 338 mg/dl, total cholesterol to 193 mg/dl, LDL to 134.7 mg/dl, and HDL to 27.0 mg/dl. His liver function tests remained in the normal range (ALT=45 IU/l and AST=28 IU/l). It was recommended that he take Red Yeast Rice once again. Four weeks later, his lipid profile had again improved, with triglycerides=207.0 mg/dl, total cholesterol=159.0 mg/dl, LDL=97.6 mg/dl, HDL=23.6 mg/dl. The serum levels of ALT, AST and

Table 1
The composition of LipoCol Forte capsule, the pulverized and encapsulated Red Yeast Rice[a]

	Concentration[b]
Protein	17.00%
Starch	68.00%
Fat	4.00%
Of which	
Linoleic acid	48.13%
Oleic acid	28.78%
Palmitic acid	18.16%
Stearic acid	4.49%
Ergosterol	0.30%
Fiber	030%
Water	2.00%
HMG-CoA reductase inhibitors (statins) [c]	1.16%
Lovastatin	0.95%
Other statins	0.21%
Gamma-aminobutyric acid (GABA)	2.55%
Alkaloids	
Water-soluble	0.30%
Lipid-soluble	0.05%
Glycosides	0.06%
Flavonoids	0.05%
Natural pigments	0.01%
Ethanol extracts	>12.00%
Water extracts	>10.00%
Citrinin	
Pb	<1.5 ppm[a]
Cd	<20.00 ppm
Hg	<0.5 ppm
As	<5.0 ppm
Cu	<70.0 ppm

[a] Concentrations are measured by the high performance liquid chromatography from the unpublished data on file of the Y&B Pharmaceuticals co., Ltd, Taipei, Taiwan.
[b] Percentage by weight.
[c] HMG-CoA, 3-hydroxy-3-methyglutaryl coenzyme A.

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glucose were all normal. During the test-and-retest treatment periods, Mr. A remained in remission.

3. Discussion

To our knowledge, this is the first report showing that Red Yeast Rice can improve dyslipidemia induced by antipsychotic agents. Red Yeast Rice is a safe and well-accepted food supplement in Chinese medicine. The reduced levels of triglycerides, cholesterol and body weight in Mr. A could be due to several potentially therapeutic components found in Red Yeast Rice (Heber et al., 1999; Ma et al., 2000): e.g. HMG-CoA reductase inhibitors (statins) can reduce cholesterol levels (Hoenig et al., 2007) and polyunsaturated fatty acids can reduce triglyceride levels (Weber and Raederstorff, 2000).

In order to prescribe Red Yeast Rice as a treatment for patients with antipsychotics-induced dyslipidemia, clinical trials are needed not only to confirm this clinical observation but also to assess possible adverse effects, including a potential interaction between antipsychotics and lovastatin (Levy and Collins, 2007) in Red Yeast Rice. Importantly, it must be kept in mind that lowering cholesterol levels may not necessarily prevent cardiovascular events (Ross et al., 2003).

4. Conclusions

Red Yeast Rice might be a safe alternative in the treatment of patients with antipsychotics-induced dyslipidemia.

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