Quetiapine and cardiac muscle disorders

Abstract

- Several detailed case reports have described cardiac muscle disorders (cardiomyopathy and myocarditis) in patients treated with quetiapine, some of which have been fatal. The symptoms included shortness of breath and oedema. The disorders sometimes resolved on withdrawal of quetiapine.

- Quetiapine is chemically similar to clozapine and olanzapine, which are known to sometimes provoke this type of adverse effect.

- In practice, a patient who develops dyspnoea or other signs of heart failure during quetiapine therapy may benefit if the drug’s role is recognised and quetiapine withdrawn.

Quetiapine is a neuroleptic that has been available in France since 2011 and has long been available in other countries. It is very similar to other neuroleptics in terms of its efficacy and adverse effect profile (1).

There have been several case reports and drug regulatory agency reviews of cardiac muscle disorders in patients taking quetiapine.

Myocarditis, cardiomyopathy. In 2011, a review by the New Zealand drug regulatory agency described 9 cases of myocarditis or cardiomyopathy in patients taking quetiapine (2). A causal relationship with quetiapine was considered probable in 5 cases. In 2 cases, clozapine was another possible cause.

In January 2013, the publicly accessible part of the British pharmacovigilance database contained 4 cases of cardiomyopathy, 3 cases of congestive cardiomyopathy and 4 cases of myocarditis attributed to quetiapine, 1 of which was fatal (3).

Dyspnoea, sometimes fatal heart failure. Several detailed reports of cardiac muscle disorders attributed to quetiapine have been published over the past ten years (4–7). Five occurred in 3 men and 2 women aged between 18 and 35 years (4–7). They all had dyspnoea, preceded in one case by influenza-like symptoms. Signs and symptoms of heart failure followed (oedema, tachycardia, gallop on auscultation, etc.), sometimes accompanied by other manifestations, such as haemoptysis, and chest pain. In one case, eosinophilia, thrombocytopenia, leukopenia and creatinine kinase elevation were reported (4).

Further investigations revealed left ventricular dilation with reduced ejection fraction in 4 cases and ST segment elevation in one case.

After withdrawal of quetiapine, 2 patients died and the other 3 improved clinically.

When the first symptoms appeared, the patients had been taking quetiapine for 4 months to 4 years at daily doses of between 600 mg and 1000 mg. The daily doses recommended in the European summary of product characteristics (SPC) range from 150 mg to 800 mg (1).

Similar to clozapine and olanzapine. Quetiapine is chemically similar to clozapine and olanzapine (1,2,5,7). These neuroleptics have a benzazepine structure (2,8).

Clozapine has been known since the early 2000s to provoke myocarditis and cardiomyopathy (9). Some cases have also been reported with olanzapine (10). In February 2013, the publicly accessible part of the European pharmacovigilance database contained 42 reports of cardiomyopathy attributed to olanzapine, including 5 deaths, and 17 reports of myocarditis, including 4 deaths (11).

In practice. These few reports of myocarditis and cardiomyopathy in patients taking quetiapine are a cause for concern, especially since quetiapine is chemically similar to clozapine and olanzapine, both of which are known to sometimes provoke these adverse effects. If a patient taking quetiapine develops dyspnoea or signs of heart failure, the potentially fatal serious nature of these adverse effects justifies withdrawal of the drug and echocardiographic investigation.