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# 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other signs of heart failure during *quetiapine* therapy may benefit if the drug's role is recognised and *quetiapine* withdrawn.**

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*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.

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**Selected references from Prescrire's literature search.**

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