

High-sensitivity cardiac troponin I-guided combination angiotensin receptor blockade and beta blocker therapy to prevent anthracycline cardiotoxicity: the Cardiac CARE RCT

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Plain language summary

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Plain language summary

The improved survival for patients with cancer is in part down to chemotherapy drugs called anthracyclines. This medication can cause the unwanted side effect of heart muscle pump injury in a minority of patients. Cancer survivors have increased rates of heart problems, including heart muscle pump failure.

Research questions

The Cardiac CARE trial tested whether tablet medications called angiotensin receptor blockers and B-blockers, taken together (cardioprotection therapy), can prevent heart muscle injury related to chemotherapy. Doctors treat heart pump failure using these medications. We examined whether a blood test called high sensitivity cardiac troponin I can detect very slight heart muscle injury and predict future problems with heart pump failure.

What we did

In the trial, only patients with increased levels of the troponin blood test marker were treated with cardioprotection therapy. Breast and blood cancer patients receiving anthracycline treatment were approached to take part. After giving consent they had a detailed scan of their heart prior to starting and 6 months after completing anthracycline chemotherapy. Patients receiving anthracycline had blood taken routinely 2 or 3 days before each treatment. Cardiac troponin levels were measured in these blood samples, and patients with an increased level were allocated at random to treatment with cardioprotection therapy or to normal care.

Research findings

We found no evidence that cardioprotection therapy prevented decline in heart function in anthracycline-treated patients with elevated cardiac troponin levels. Patients with no increased troponin level had a similar decline in heart function. It was reassuring that the reduction in heart muscle function following anthracycline chemotherapy was small. We believe the results show that cardioprotection therapy is not effective and may not be required for most patients.

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