

## TOPGEAR: Radiation added to chemotherapy for stomach cancer

The TOPGEAR trial is helping researchers answer an important health question. It will eventually provide evidence on whether adding radiation therapy to a standard chemotherapy treatment will improve the survival rate of people having surgery to cure gastric cancer. The trial has two stages. Stage 1 has been completed.

We appreciate the part played by our volunteer participants. This may help to improve the medical treatment of patients in the future. Here is a summary of the trial and results.

### What was the trial about?

There are two standard evidence-based ways of treating operable gastric cancer.

1. In the USA, the treatment is chemotherapy and radiation given after surgery to remove the tumour.
2. In the UK, the treatment is chemotherapy both before and after the surgery.

Despite the best available treatments, stomach cancer can come back after surgery. In TOPGEAR, the investigators are attempting to improve on the benefit of the UK treatment by adding a course of radiation before surgery.

Stage 1 of the trial was to assess the safety and tolerability of radiation therapy and chemotherapy together and to see whether this affected the surgical treatment.

120 participants were recruited from 51 hospitals in Australia, New Zealand and Europe. 60 were randomly allocated to standard chemotherapy before and after surgery, that is, 3 cycles before and 3 cycles after.

60 were allocated to pre-surgery radiation as well. This group received 2 cycles of chemotherapy plus radiotherapy before surgery and then 3 cycles of chemotherapy after.

A cycle is one course of treatment every 3 weeks. Most patients were men, and the average age was in the 60s. About a quarter were over 70.

### How was the effect of treatment measured?

In stage 1 of this trial, the investigators measured the safety of the combined treatments and whether patients comfortably completed all their allocated treatments. For example, they looked at whether the extra treatment had complications that prevented patients from going on to surgery.

### Was the new treatment better?

The standard and new treatments will not be fully compared until the trial has recruited the full number of patients and all the patients have been followed up for at least 3 years.

Most patients in both groups were able to complete their treatment before surgery. Most finished the chemotherapy, and almost all of those assigned to radiation finished it.

105 patients had the surgery. 15 did not, mainly because their cancer had become worse. About half the patients had more chemotherapy after the surgery, but some of these did not finish the full course of treatment.

### What were the side-effects of the treatment?

The most common side-effects of the chemotherapy were abnormal blood counts, diarrhoea, nausea and loss of appetite.

### Were there any serious side-effects?

The side effects were as expected for the UK treatment, which has been used for the past 10 years. Importantly, stage 1 of the trial has shown that adding radiotherapy to this treatment before surgery does not result in any additional side-effects and does not make the surgery any more difficult.

### What does this mean for trial patients?

Stage 1 of the trial was completed successfully. It showed that adding radiation to the standard treatment was reasonable and did not cause additional harm to patients. Radiotherapy did not prevent patients from then undergoing surgery to remove their tumours.

### How will the results help patients and doctors in future?

The new combination of treatment may improve the rate of survival, and it is now known that it does not increase complications and side-effects. The investigators reviewed the effects of all the components of the treatment carefully and are confident that it can be used in a large clinical trial.

### What will the researchers do next?

The TOPGEAR researchers are now continuing with stage 2 of the trial. They intend to enrol 752 participants in total from 80 hospitals around the world. In stage 2, the two treatments will be compared statistically to see if the new treatment improves the rate of survival.

The blood samples and tumour tissue provided by patients will be used, with their permission, to look for individual biological differences that might have affected a patient's progress.

### Where can I find out more about the trial?

Talk with your GP or oncologist.

#### The results have been presented at an international conference

Leong T, and others. TOPGEAR: A randomized phase II/III trial of perioperative ECF chemotherapy versus preoperative chemoradiation plus perioperative ECF chemotherapy for resectable gastric cancer. Interim results from an international, intergroup trial of the AGITG/TROG/NCIC CTG/EORTC. *European Cancer Congress*; September 2015; Vienna. Unfortunately, the presentation has not been published.

#### Trial registration

Australian New Zealand Clinical Trials Registry  
[www.anzctr.org.au](http://www.anzctr.org.au)  
Registration number ACTRN12609000035224

#### Australasian Gastro-Intestinal Trials Group

[agitg.org.au](http://agitg.org.au)

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The sponsors were the Australasian Gastro-Intestinal Trials Group (AGITG), the Trans-Tasman Radiation Oncology Group (TROG), the NCIC Cancer Trials Group (Canada) and the European Organisation for Research and Treatment of Cancer (EORTC), and the study was coordinated by the Clinical Trials Centre at the University of Sydney.

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Results of any clinical trial do not represent complete knowledge about treatment. Patients should not change their therapy on their understanding of the results.