



# Stroke and recurrent haemorrhage associated with antithrombotic treatment after gastrointestinal bleeding in patients with atrial fibrillation: nationwide cohort study

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## ABSTRACT

### STUDY QUESTION

What are the risks of all cause mortality, thromboembolism, major bleeding, and recurrent gastrointestinal bleeding associated with restarting antithrombotic treatment after gastrointestinal bleeding in patients with atrial fibrillation?

### METHODS

This Danish cohort study (1996-2012) included all patients with atrial fibrillation discharged from hospital after gastrointestinal bleeding while receiving antithrombotic treatment. Restarted treatment regimens were single or combined antithrombotic drugs with oral anticoagulation and antiplatelets. Follow-up started 90 days after discharge to avoid confounding from use of previously prescribed drugs on discharge. Risks of all cause mortality, thromboembolism, major bleeding, and recurrent gastrointestinal bleeding were estimated with competing risks models and time dependent multiple Cox regression models.

### STUDY ANSWER AND LIMITATIONS

4602 patients (mean age 78 years) were included. Within two years, 39.9% (95% confidence interval 38.4% to 41.3%, n=1745) of the patients had died, 12.0% (11.0% to 13.0%, n=526) had experienced thromboembolism, 17.7% (16.5% to 18.8%, n=788) major bleeding, and 12.1% (11.1% to 13.1%, n=546) recurrent gastrointestinal bleeding. 27.1% (n=924) of patients did not resume antithrombotic treatment. Compared with non-resumption of treatment, a reduced risk of all cause mortality was found in association with restart of oral anticoagulation

(hazard ratio 0.39, 95% confidence interval 0.34 to 0.46), an antiplatelet agent (0.76, 0.68 to 0.86), and oral anticoagulation plus an antiplatelet agent (0.41, 0.32 to 0.52), and a reduced risk of thromboembolism was found in association with restart of oral anticoagulation (0.41, 0.31 to 0.54), an antiplatelet agent (0.76, 0.61 to 0.95), and oral anticoagulation plus an antiplatelet agent (0.54, 0.36 to 0.82). Restarting oral anticoagulation alone was the only regimen with an increased risk of major bleeding (1.37, 1.06 to 1.77) compared with non-resumption of treatment; however, the difference in risk of recurrent gastrointestinal bleeding was not significant between patients who restarted an antithrombotic treatment regimen and those who did not resume treatment.

### WHAT THIS STUDY ADDS

Among patients with atrial fibrillation who experience gastrointestinal bleeding while receiving antithrombotic treatment; subsequent restart of oral anticoagulation alone was associated with better outcomes for all cause mortality and thromboembolism compared with patients who did not resume treatment. This was despite an increased longitudinal associated risk of bleeding.

### FUNDING, COMPETING INTERESTS, DATA SHARING

This study was supported by a grant from Boehringer-Ingelheim. Competing interests are available in the full paper on bmj.com. The authors have no additional data to share.

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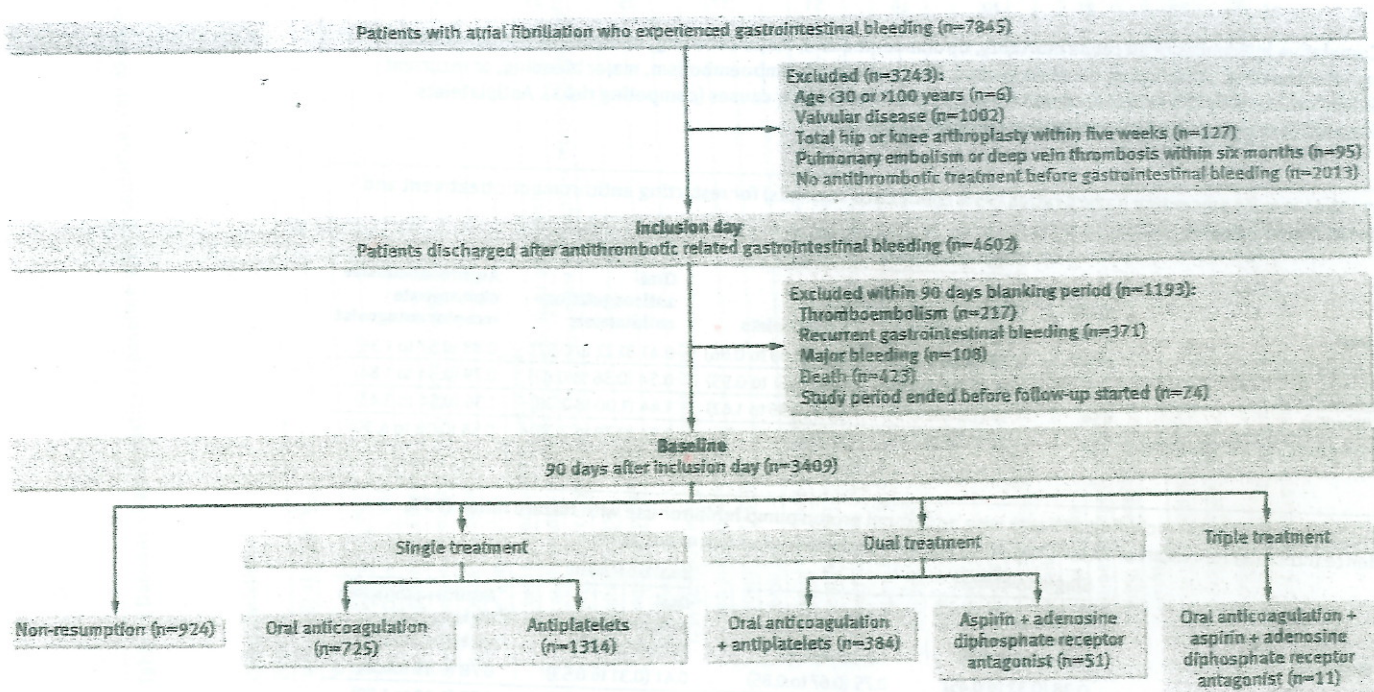


Fig 1 | Selection of study population. Antiplatelets comprise aspirin or adenosine diphosphate receptor antagonists