# Glutamine Suppletion Minimizes the Atrial Fibrillation Burden

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| **Ethical review** | Approved WMO |
| **Status** | Recruitment stopped |
| **Health condition type** | Cardiac arrhythmias |
| **Study type** | Interventional |

## Summary

### ID

NL-OMON46467

**Source**
ToetsingOnline

**Brief title**
Glutaminimize AF

### Condition

- Cardiac arrhythmias

**Synonym**
Atrial fibrillation

**Research involving**
Human

### Sponsors and support

**Primary sponsor:** Cardiologie
**Source(s) of monetary or material Support:** research grants

## Intervention

**Keyword:** Atrial fibrillation, Glutamine, Heat shock protein, Therapy

## Outcome measures

### Primary outcome

Primary study parameters are the HSP levels of HSP27 and HSP70 in blood at baseline, after 3 months and after 6 months. Main endpoint is completion of 6 months follow-up period.

### Secondary outcome

Secondary study parameters are the AF incidence and burden at baseline, after 3 months and after 6 months. Furthermore the correlation between the HSP levels and the AF incidence and burden will be derived at baseline, after 3 months and after 6 months.

# Study description

### Background summary

Atrial fibrillation (AF) is the most common age-related, progressive cardiac rhythm disorder that is associated with serious complications such as stroke, heart failure, impaired cognitive function and increased mortality. In The Netherlands, there are approximately 45,000 new AF patients every year and this number is most likely underestimated as many people may have undiagnosed (asymptomatic) paroxysmal AF. At present, there is no curative therapy. Importantly, the persistence of AF is rooted in the presence of electropathology which is defined as complex electrical conduction disorders caused by structural damage of atrial tissue.Hence, pharmacological therapy of AF should be directed at resolving structural damage. Brundel et al. recently showed that structural damage results from derailment in cardiomyocyte proteostasis (protein expression, function and clearance) and that this could be normalized by overexpression of heat shock proteins (HSPs). A commercially available dietary supplement able to induce cardio-protective HSPs and registered in our country is L-glutamine. L-glutamine is a semi-essential amino acid, which enhances the binding of heat shock transcription factor 1 to the

promoter sequences of hsp genes, resulting in induced expression of HSP70 and HSP27 in organs, including the heart. In addition, administration of L-glutamine before cardiopulmonary bypass surgery protected against CPB-induced inflammation responses in humans and in experimental models. Furthermore, L-glutamine was found to induce HSP70 levels in serum of critically ill patients, and correlated with improved outcome. Although the role of L-glutamine as an inducer of HSP expression and protector against various diseases including ischemic heart diseases and heart failure has been recognized, their potential protective role in AF progression has not been investigated.

**Study objective**

The primary objective is to examine whether L-glutamine suppletion in patients diagnosed with AF induces HSP levels in blood samples. Furthermore, the AF incidence and burden will be derived and HSP levels will be correlated with the AF incidence and burden. Positive outcomes of this first pilot study aimed at prevention of cardiomyocyte damage and subsequently reduction of AF episodes will be a breakthrough in therapy of AF.

**Study design**

The Glutaminimize AF trial is a prospective interventional trial with invasive measures (blood drawing) with a scheduled duration of 6 months. Patients with diagnosed AF and frequent symptomatic AF episodes will start with oral intake (10gr twice daily) of the L-glutamine supplement after signing written informed consent.

Baseline measurements
Clinical history of the patient, including start date/year of AF symptoms, diagnosis date, symptoms, AF incidence, AF burden and prior AF therapy is evaluated. Additional to the standard clinical care for AF patients, laboratory tests will be performed for testing of the kidney, liver, thyroid function, glucose level and HSP level. A start date of oral intake of the L-glutamine supplement will be chosen with the patient. Patients will be asked to keep up a diary where they keep track of their L-glutamine intake, AF occurrence, symptoms and potential side-effects.

Investigational product
L-glutamine dietary supplement (oral intake of 20gr KABI Glutamine powder, of which 10gr L-glutamine, twice daily).

Follow up
Patients will be evaluated at a dedicated outpatient clinic at 3 and 6 months after start of L-glutamine intake. The evaluation will consist mainly of standard AF follow-up care: patient interview (including evaluation of AF

occurrence and symptoms) and a 12-leads ECG. Additionally, at the 3 month and 6 month follow-up a laboratory test for HSP levels is done and L-glutamine intake and potential side-effects (using the patient diary) are checked together with the patient. The patient diary and interview will be used to derive the AF incidence and burden at the moment of follow-up. At 6 months follow-up the blood sample will also be tested for kidney, liver, thyroid function and glucose levels.

### Intervention

Oral intake of L-glutamine supplement (KABI Glutamine, 20 gr sachets of which 10 gr L-glutamine, twice daily)

### Study burden and risks

For participants of this study potential benefits are reduction of AF burden, including AF symptoms. The patient will be compensated for travel expenses during this study. The investigators will not be compensated for their participation with regards to this study. Patients will be evaluated at a dedicated outpatient clinic at 3 and 6 months after inclusion for follow-up. Adverse events are classified as either only *adverse* or *serious adverse* based on the guidelines of our institutional medical ethical committee.

## Contacts

**Public**
Selecteer

's Gravendijkwal 230
Rotterdam 3015 CE
NL
**Scientific**
Selecteer

's Gravendijkwal 230
Rotterdam 3015 CE
NL

## Trial sites

### Listed location countries

Netherlands

## Eligibility criteria

**Age**
Adults (18-64 years)
Elderly (65 years and older)

### Inclusion criteria

Adult (>18 years), frequent (>1/week) symptomatic atrial fibrillation

### Exclusion criteria

Diabetes mellitus, soya, gluten or shell fish allergy

## Study design

### Design

**Study type:** Interventional

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| Masking: | Open (masking not used) |
| Control: | Uncontrolled |
| Primary purpose: | Treatment |

### Recruitment

NL

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|---|---|
| Recruitment status: | Recruitment stopped |
| Start date (anticipated): | 02-05-2018 |
| Enrollment: | 25 |
| Type: | Actual |

# Ethics review

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| Approved WMO Date: | 31-01-2018 |
| Application type: | First submission |
| Review commission: | METC Erasmus MC, Universitair Medisch Centrum Rotterdam (Rotterdam) |

# Study registrations

## Followed up by the following (possibly more current) registration

No registrations found.

## Other (possibly less up-to-date) registrations in this register

No registrations found.

## In other registers

| Register | ID |
|---|---|
| CCMO | NL63232.078.17 |