A prospective study on vascular diseases in patients with haemophilia 2 years evaluation

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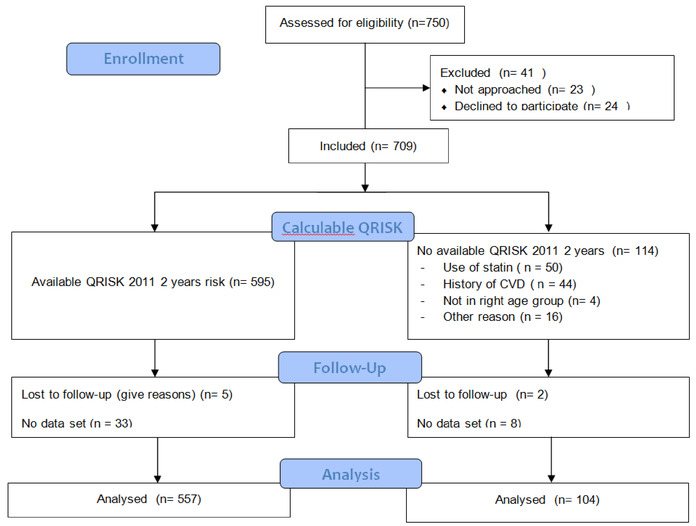
Introduction

Cardiovascular disease (CVD) mortality is reported to be lower in haemophilia patients than in the general population, but reports on non-fatal CVD are lacking. To appreciate the effect of haemophilia on CVD risk, it is important to know the incidence of CVD compared to the general population. In the general population the cardiovascular risk can be assessed with several predication algorithms, like QRISK, Framingham and SCORE. Earlier we reported an unfavorable QRISK-risk profile in people with hemophilia compared to the general population[1].

Methods

A prospective multicenter observational study for the incidence of cardiovascular disease was started. For this 2 years follow up data on CVD incidence of haemophilia patients (aged 30 years at inclusion) from The Netherlands and the UK were collected. The incidence of CVD was compared to the expected incidence based on the QRISK2 – 2011 cardiovascular risk score. This score can be used in persons aged 30-84 years, without a history of CVD or use of statins. It calculates the risk for a subset of cardiovascular diseases: myocardial infarction, angina, coronary heart disease, stroke, and transient ischaemic stroke. Furthermore all the other cardiovascular events in the 2 year follow up were recorded.



Flowchart

Table 1 -- CVD Study population		General population
Number included	709	
Age at inclusion in years	49,8	
Haemophilia A	84%	
Severe Haemophilia	48%	
Risk factors		
Current smoker at inclusion	28%	26%
Hypertension	49%	40%* (38-43)
Heart disease in 1st degree relative < 60 yr	18%	
Diabetes Mellitus	6%	6%
BMI >25	43%	41%
BMI > 30	15%	20% * (19-21)
Total cholesterol > 5.0	44%	68% * (67-70)
QRISK2 score: 2 years risk	1,65	

Table 1 – baseline characteristics

Results

Baseline characteristics and CVD risk factors of the 709 participating patients are shown in Table 1. Of which 661 evaluable datasets are available for the current review (flowchart).
At 2 years evaluation 557 of these 661 had a calculable QRISK score, Incalculable scores were due to high age, statin treatment or a history of cardiovascular disease.
In the patient group with a calculable QRISK score, the median 2 years QRISK score was 1,7% (SD: 2,2) and the 10 years risk was 9,0% (SD 10,8), inferring an expected 9.5 CVD events during 2 years of follow up. In this group 4 events developed (table 2), compared to the expected 9,5 events. ..
In the group without a calculable score 4 QRISK events developed (table 3). Other CVD events (n=14) in both groups are described in table 4. Mostly atrial fibrillation. The mortality is shown in table 5, which shows a mortality of 8 patients in 2 years, mostly due to malignancy. .

Table 2 – events in patients with calculable QRISK 2011

QRISK-events	Age	QRISK 2y	QRISK 10y
Ischaemic heart disease	65	3,8	20,6
Ischaemic stroke	48	0,8	4,5
Ischaemic heart disease	47	2,4	13,6
Intracranial haemorrhage	77	4,2	22,6

Table 3 – events in patient without calculable QRISK 2011

QRISK-events	Age
Ischaemic heart disease	96
TIA, carotid artery stenosis	79
Myocardial infarction	81
Intracranial haemorrhage	89

Table 4 – Other cardiovascular events

Other cardiovascular events
Atrial fibrillation (n= 8)
Rhytm disorder (n= 3)
Aortic Valve pathology (n=1)
Pericarditis (n = 1)
Plaque carotid a. (n=1)

Table 5 –Mortality

Mortality in the 2 year follow up	age
Epileptic convulsion	34
Hepatic cellular carcinoma	76
Hepatic cellular carcinoma	68
Lung carcinoma	83
Malignancy	83
Intracranial Haemorrhage	89
Intracranial Haemorrhage	65
Not reported	36

Conclusion:

Our early results show a more than twice lower CVD event rate than expected.
The leading cause of death seems to be malignancy related and intra-cranial haemorrhage.
Atrial fibrillation is quite common..
Further analysis of the 5 year data need to follow.

References::
1 Fransen van de Putte DE, Fischer K, Makris M, et al. Unfavourable cardiovascular disease risk profiles in a cohort of Dutch and British haemophilia patients. Thromb Haemost. 2013;109:16–23