Title: BSH Research Fellow Update

Speaker: Dr Simon Beggs  
Cardiology Research Fellow  
University of Glasgow

Conflicts: Research study support from Abbott Laboratories and Roche Diagnostics Ltd  
Consultancy Vifor Pharma
A confession to make.....
A confession to make.....

(.....but first a reminder)
What is the role of arrhythmias in heart failure? (RHYTHM-HF)
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- Prospective, observational, cohort-study
What is the role of arrhythmias in heart failure? (RHYTHM-HF)

- Prospective, observational, cohort-study

- Population:
  - index hospitalisation for AHF
  - NT-proBNP ≥ 1000pg/mL
  - any EF%
What is the role of arrhythmias in heart failure? (RHYTHM-HF)

- Prospective, observational, cohort-study

- Population:
  - index hospitalisation for AHF
  - NT-proBNP ≥ 1000pg/mL
  - any EF%
Pt admitted with AHF
Pt admitted with AHF
Pt admitted with AHF

Identify

Consent
Pt admitted with AHF

Identify

Consent

Implant ICM

British Society for Heart Failure
Pt admitted with AHF
Pt admitted with AHF

Consent

Identify

Implant ICM
Pt admitted with AHF

Consent → Implant ICM

Identify

Pt admitted with AHF
British Society for Heart Failure

Consent → Implant ICM

Identify

Pt admitted with AHF → Discharged
Pt admitted with AHF → Discharged

Identify → Consent

Implant ICM → Consent
Pt admitted with AHF → Discharged

Consent → Implant ICM

Identify

Follow up:
- telephone
- electronic linkage
British Society for Heart Failure

Pt admitted with AHF → Discharged

Follow up:
- telephone
- electronic linkage

Overall timeline

Consent → Implant ICM
Identify
British Society for Heart Failure

Consent → Implant ICM

Identify → Pt admitted with AHF → Discharged

Follow up:
- telephone
- electronic linkage

Overall timeline

Years 1-2: recruitment phase
British Society for Heart Failure

Consent → Implant ICM

Identify

Pt admitted with AHF → Discharged

Follow up:
- telephone
- electronic linkage

Overall timeline

Years 1-2: recruitment phase
Years 3-4: follow-up only
Pt admitted with AHF

Identify

Consent

Implant ICM

Discharged

Follow up:
- telephone
- electronic linkage

Overall timeline

Years 1-2: recruitment phase

Years 3-4: follow-up only

END OF STUDY
British Society for Heart Failure

Overall timeline

Discharged → Death

END OF STUDY
Overall timeline:

- Discharged
- Death
- Rehospitalisation for HF
- END OF STUDY
British Society for Heart Failure

Overall timeline

Discharged

Arrhythmic burden

Death

Rehospitalisation for HF

END OF STUDY
British Society for Heart Failure

Arrhythmic burden

Discharged ➔ Death

Overall timeline

END OF STUDY
British Society for Heart Failure

Discharged

Arrhythmic burden + Terminal electrocardiographic rhythm

Overall timeline

END OF STUDY
British Society for Heart Failure

Discharged

Arrhythmic burden + Terminal electrocardiographic rhythm

Overall timeline

END OF STUDY
Outline objectives

1. Describe contribution of arrhythmias to rehospitalisation and death in patients with HF

2. Describe terminal rhythms in patients with HF
Collaborative working

3x NHS health boards / trusts
British Society for Heart Failure

Collaborative working

- NHS Greater Glasgow and Clyde
- Golden Jubilee Foundation
- University Hospitals of Leicester NHS Trust

3x NHS health boards / trusts

Collaborative funding

- Investigator fellowship
- Injectable cardiac monitors / data management
- NT-proBNP assays and PoC meters
.....and now the confession
Even greater ambitions....
Success!

BHF Clinical Study grant CS/17/6/33009

£429,737 over 4 years, 6 months
British Society for Heart Failure

Collaborative working

NHS
Greater Glasgow and Clyde
Golden Jubilee Foundation
University Hospitals of Leicester NHS Trust

3x NHS health boards / trusts

Collaborative funding

Investigator fellowship

Abbott

Devices, transmitters, data management

Roche

NT-proBNP assays and PoC meters
Collaborative working

British Society for Heart Failure

Collaborative funding

3x NHS health boards / trusts

Investigator fellowship

Devices, transmitters, data management

NT-proBNP assays and PoC meters

£429,737 BHF clinical study grant
British Society for Heart Failure

Additional elements delivered with BHF clinical study grant
British Society for Heart Failure

Additional elements delivered with BHF clinical study grant

Overall timeline

Years 1-2: recruitment phase

Years 3-4: follow-up only

END OF STUDY
British Society for Heart Failure

Additional elements delivered with BHF clinical study grant

Novel substudies

Overall timeline

Years 1-2: recruitment phase

Years 3-4: follow-up only

END OF STUDY
British Society for Heart Failure

Additional elements delivered with BHF clinical study grant

Novel substudies

Research nurse

Overall timeline

Years 1-2: recruitment phase

Years 3-4: follow-up only

END OF STUDY
British Society for Heart Failure

Additional elements delivered with BHF clinical study grant

Overall timeline

Years 1-2: recruitment phase

Years 3-4: follow-up only

Novel substudies

Research nurse

Research fellow

END OF STUDY
Overall timeline

- Years 1-2: recruitment phase
- Years 3-4: follow-up only

Novel substudies

- Research nurse
- Research fellow

Additional elements delivered with BHF clinical study grant
Unveiling our novel substudies…
British Society for Heart Failure

Unveiling our novel substudies…

1. Blood & urine storage/analysis
Unveiling our novel substudies...

1. Blood & urine storage/analysis

2. Cardiac MRI
Unveiling our novel substudies…

1. Blood & urine storage/analysis

2. Cardiac MRI

3. Post-mortem examination
Outline Objectives

1. Describe contribution of arrhythmias to rehospitalisation and death of patients with HF

2. Describe terminal rhythms in patients with HF
Outline Objectives

1. Describe contribution of arrhythmias to rehospitalisation and death of patients with HF

2. Describe terminal rhythms in patients with HF

3. Describe cause of death in HF (and terminal rhythm)
Recruitment update
Recruitment update

- First patient recruited 23rd August
- Run rate ~2.3 patients / week
Overview of first 25 patients
Age
<p>| Age (years) | &lt;60 | 60 - 69 | 70 - 79 | 80 - 89 | 90 + |</p>
<table>
<thead>
<tr>
<th>Age (years)</th>
<th>&lt;60</th>
<th>60 - 69</th>
<th>70 - 79</th>
<th>80 - 89</th>
<th>90 +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>1</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>
Age

Mean = 75
Median = 74

Age (years) | <60 | 60 - 69 | 70 - 79 | 80 - 89 | 90 +
---|---|---|---|---|---
1 | 9 | 6 | 6 | 3
Screening NT-proBNP (pg/mL)
Screening NT-proBNP (pg/mL)

<table>
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<tr>
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<th>1000 – 1999</th>
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British Society for Heart Failure
Screening NT-proBNP (pg/mL)

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<tbody>
<tr>
<td></td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>11</td>
</tr>
</tbody>
</table>
Left ventricular function
Left ventricular function

‘Preserved’  Mild LVSD  Mod LVSD  Severe LVSD
Left ventricular function

- 'Preserved': 4
- Mild LVSD: 3
- Mod LVSD: 6
- Severe LVSD: 12
Consent to substudies

Substudy 1: Blood / urine storage
Substudy 2: CMR
Substudy 3: Post-mortem
Consent to substudies

25 of 25

Substudy 1: Blood / urine storage
Substudy 2: CMR
Substudy 3: Post-mortem
British Society for Heart Failure

Consent to substudies

25 of 25

Substudy 1:
Blood / urine storage

12 of 25

Substudy 2:
CMR

Substudy 3:
Post-mortem
Consent to substudies

- **Substudy 1:** Blood / urine storage
  - 25 of 25

- **Substudy 2:** CMR
  - 12 of 25

- **Substudy 3:** Post-mortem
  - 18 of 25
Beggs SAS, Jhund PS, Jackson CE, McMurray JJV, Gardner RS.

Non-ischaemic cardiomyopathy, sudden death and implantable defibrillators: a review and meta-analysis Heart
Beggs SAS, Jhund PS, Jackson CE, McMurray JJV, Gardner RS. Non-ischaemic cardiomyopathy, sudden death and implantable defibrillators: a review and meta-analysis Heart

POP-ECG-HF-AF study
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OTHER

- Question writer - HF exam of the ESC HFA
- Meeting report – 9th BSH day for revalidation and training
Acknowledgements
British Society for Heart Failure

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• Prof John McMurray
• Dr Colette Jackson
• Dr Ninian Lang
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• Prof Iain Squire
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