Prevalence of silent vascular brain lesions among patients with atrial fibrillation and no known history of stroke

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- Consulting/Royalties/Owner/ Stockholder of a healthcare company (David Conen received consulting fees from Servier, Canada)
Disclosures

• David Conen received consulting fees from Servier, Canada

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Atrial fibrillation (AF) is the most common cardiac arrhythmia in the general population\(^1\)

The incidence of AF is estimated to double until 2060\(^2\)

Patients with AF have an increased risk of stroke, death, congestive heart failure and poor quality of life\(^3,4\)

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Background II

• More recent evidence suggests that patients with AF also face an increased risk of cognitive decline and dementia\(^1\)
• The underlying mechanisms for this relationship is currently unknown

Clinically overt ischemic infarction

6% / year
Aim & hypothesis

• To assess the frequency of silent brain lesions among AF patients without a clinical history of stroke or transient ischemic attack in a large and unselected sample of patients with documented AF

• We hypothesized that patients with documented AF have a large number of previously unknown brain lesions
Methods

• Ongoing prospective multicenter observational cohort study (n=2415 patients enrolled among 14 centers in Switzerland)

• Eligibility criteria: history of documented AF, age ≥65 years

• Standardized information on personal characteristics, risk factors, co-morbidities, antithrombotic treatment and other factors was obtained

• Brain magnetic resonance imaging (MRI) was obtained according to a standardized protocol

• Brain MRIs were analyzed in a central core lab by blinded assessors
Results

- Brain MRI scans available in 1’736 patients
- 13% had a history of stroke, 9% a history of a TIA, leaving 1’388

<table>
<thead>
<tr>
<th>Variable</th>
<th>n=1’388</th>
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</thead>
<tbody>
<tr>
<td>Mean age</td>
<td>72 ± 9</td>
</tr>
<tr>
<td>Female Sex</td>
<td>27 %</td>
</tr>
<tr>
<td>Paroxysmal AF</td>
<td>45%</td>
</tr>
<tr>
<td>Oral Anticoagulation</td>
<td>90%</td>
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<tr>
<td>History of hypertension</td>
<td>68%</td>
</tr>
<tr>
<td>History of diabetes</td>
<td>14%</td>
</tr>
<tr>
<td>History of coronary artery disease</td>
<td>26%</td>
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<tr>
<td>History of heart failure</td>
<td>21%</td>
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<tr>
<td>$\text{CHA}_2\text{DS}_2$-VASC score</td>
<td>2.8 ± 1.4</td>
</tr>
</tbody>
</table>
Results II

Prevalence of silent MRI lesions

- Infarction: 15%
- Lacune: 16%
- Microbleeds: 19%
- ≥1 lesion: 41%
Conclusion

• Four out of ten patients with AF but without a clinical history of stroke or transient ischemic attack had clinically unrecognized (‘silent’) brain lesions

• These silent lesions may at least in part explain the increased risk of cognitive decline in patients with AF

• The relationships of individual brain lesions with cognitive function needs to be assessed in future studies

• Better brain protection in AF patients seems warranted