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Title : Prevalence of atrial fibrillation from a large-scale screening population: results from the Belgian heart rhythm week.
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Background: Diagnosing AF in patients aged 65 years (y) or over, before the first embolic complication, is recognized as a class I recommendation by the recent ESC guidelines. However, data are lacking in the general population to select the critical lower age limit to organize large screening programs

Methods: Since 2010, Belgian citizens preferably over 40 y old were invited by the media during an annual "Heart Rhythm Week" to participate in a free screening in 89 hospitals. Participants were invited to fill in a validated stroke risk stratification questionnaire registering CHA2DS2-VASc score. Next, a one lead ECG with a hand held monitor was performed (Omron  HeartScan).

Results: Over 3 y, 55.359 voluntary subjects were screened representing 0.5% of the national population, 59% were women and mean age was 57 ± 14 y. AF was detected at Omron scan in 840 patients (1.52%), only 43% were women and mean age was 67 ± 13 y ($p < 0.001$). A subset of 14.338 subjects was excluded from analysis, either being < 40 y or having incomplete data. In the 26.582 subjects aged 40-64 y, AF was present in 249 (0.94%), while in the 14.439 subjects aged > 65 y, AF was present in 437 (3.03%). Prevalence of AF varied from 0.5% in subjects < 40 y to 0.7% in 40-44y, 0.7% in 45-49y, 0.8% in 50-54y, 1.1% in 55-59y, 1.1% in 60-64y, 1.7% in 65-69y, 2.8% in 70-74y, 4.0% in 75-79y, 5.6% in 80-84y, and 6.1% in > 85 y. In subjects aged 40-64y, CHA2DS2-VASc score was 0.5 ± 1 in subjects in sinus rhythm and 0.7 ± 1.1 in AF patients. In subjects aged > 65 y, CHA2DS2-VASc score was 2.8 ± 1.5 in subjects in sinus rhythm and 3.2 ± 1.7 in AF patients.

Conclusions: Subjects aged 40-64y have an overall non negligible prevalence of AF of 0.94% while not being identified by a higher CHA2DS2-VASc score. Limiting a large screening population only to subjects > 65 y would have missed AF diagnosis in a significant number of patients. However the costs associated with these large scale screenings have to be balanced against the benefit of early detection of AF in younger patients with lower CHA2DS2-VASc scores.