Multimorbidity management in atrial fibrillation: The Polish perspective in the EHRA-PATHS study

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ABSTRACT

Background: Atrial fibrillation (AF) is the most common arrhythmia which places a significant burden on individuals as well as the healthcare system. AF management requires a multidisciplinary approach in which tackling comorbidities is an important aspect.

Aims: This study aimed to evaluate how multimorbidity is currently assessed and managed and to determine if interdisciplinary care is undertaken.

Methods: A 21-item online survey was undertaken over four weeks as part of the EHRA-PATHS study examining comorbidities in AF and distributed to European Heart Rhythm Association members in Europe.

Results: A total of 341 eligible responses were received, of which 35 (10%) were from Polish physicians. Compared to other European locations, the rates of specialist services and referrals varied but were not significantly different. However, there were higher numbers of specialized services reported in Poland compared to the rest of Europe for hypertension (57% vs. 37%; $P = 0.02$) and palpitations/arrhythmias (63% vs. 41%; $P = 0.01$), whereas rates of sleep apnea services and comprehensive geriatric care tended to be lower (20% vs. 34%; $P = 0.10$ and 14% vs. 36%; $P = 0.01$, respectively). The only statistical difference in reasons for referral rates between Poland and the rest of Europe was the barrier relating to insurance and financial reasons (31% vs. 11%; $P < 0.01$, respectively).

Conclusions: There is a clear need for an integrated approach to patients with AF and associated comorbidities. Preparedness of Polish physicians to deliver such care seems to be similar to other European countries but may be hampered by financial obstacles.

Key words: atrial fibrillation, comorbidities, older people, survey

WHAT'S NEW?

Compared to other European locations, the rates of specialist services and referrals varied in Poland but were not significantly different from the rest of Europe. The survey showed that there were statistically higher numbers of specialized services in Poland compared to the rest of Europe for hypertension and palpitations but lower rates for sleep apnea and comprehensive geriatric care. Polish physicians seem to face more insurance and financial barriers to delivering comprehensive care than their European colleagues. Overall, there is a need for better interdisciplinary collaboration to improve patient outcomes in all European countries.

INTRODUCTION

Atrial fibrillation (AF) is the most common cardiac arrhythmia affecting approximately 33 million adults and is associated with a significant burden on healthcare systems [1]. Many AF patients have comorbidities, including hypertension, diabetes, sleep apnea, coronary heart and other diseases, which are globally associated with increased all-cause mortality. AF is a complex long-term condition that involves a multifaceted, holistic, and multidisciplinary approach. With multimorbidity defined as the presence of two or more diagnosed long-term conditions [2], in relation to AF, there is a lack of a pathway-based approach to manage AF comorbidities. One observational study identified a six-fold increase in all-cause mortality risk in those with AF who had four or more comorbidities compared to those without AF comorbidities [2]. In the growing population diagnosed with AF and associated concomitant conditions, there is a need for new interventions to optimize outcomes using a pathway-driven approach that is systematic and standardized. Patient pathway-based interventions have been demonstrated to be positive in other populations, but these benefits have not been consistently identified across studies and disease processes [3–6].

The EHRA-PATHS "Addressing multimorbidity in elderly atrial fibrillation patients through interdisciplinary, tailored, patient-centered care pathways" is a Horizon 2020 project coordinated by the European Heart Rhythm Association (EHRA) and the European Society of Cardiology (ESC), with 14 research collaborators from across Europe. The primary aim of EHRA-PATHS is to develop a new pathway for care for older patients (>65 years) with multimorbidity and AF through interdisciplinary, patient-centered, and systematic approaches [7]. This survey study is one component of a work package to undertake a clinical practice gap analysis and measure current clinical practices including clinicians' and patients' experiences [7]. With the results from the various work packages, a patient pathway-based intervention will be developed and evaluated for the management of patients multimorbidity and AF.

Concerning healthcare professionals and current AF comorbidity management, the study aimed to capture the opinions of Polish cardiologists, electrophysiologists, and allied health professionals on the current structure and interdisciplinary management of comorbidities in AF patients with the specific aims: (1) evaluate how multimorbidity is currently addressed by clinicians during AF treatment to characterize the treatment structure; (2) assess how the interdisciplinary management of multimorbidity and AF is currently conducted.

METHODS

This survey was developed and piloted by the research team, and a multi-methods cross-sectional design using both quantitative and qualitative approaches was applied. The survey aims were achieved through the following objectives: (1) identifying specific methods used by clinicians to assess, diagnose, manage, and refer AF patients with multimorbidity throughout Europe; (2) describing key areas of complexity in the management of multimorbidity and AF across Europe; and (3) highlighting areas of interprofessional working to optimize health status in AF patients with multimorbidity throughout Europe. The survey consisted of 21 questions including respondent characteristics, 4 questions relating to local AF referral and management practices, and 10 questions relating to participants' experiences of managing AF patinets with multimorbidity as well as a free text section for any comments.

The questionnaire was placed on the Qualtrics Survey Platform as an e-survey with a digital link to the survey sent to all EHRA members via newsletters and EHRA emails. The survey was open for 6 weeks between November 1, 2021 to December 12, 2021. It was open to physicians, registered nurses, and allied healthcare professionals who work directly with AF patients in European countries and are members of the EHRA and ESC. They were recruited through convenience sampling methods. The aim was to try and have responses from 10% of EHRA members (n = 350). Based on the eligibility criteria, all responses from outside of the EU were excluded from the analysis process.

This study has been registered with King's College London Research Ethics Committee under the minimal risk registration process (Ref MRA-20/21-25315).

Data Analysis (including statistical analysis)

A mixed methods approach was applied to integrate both qualitative and quantitative findings. Descriptive data analysis was conducted through the Qualtrics survey platform (2021), and comparative inferential statistics were undertaken using SPSS statistical software (International Business Machines Corporation [IBM] Statistical Package for Social Sciences) Version 26 for statistical analysis. Descriptive data were presented as counts and percentages. Comparisons

Table 1. Comparative characteristics between Europe and Poland in the survey sample

N (%)	Poland (n = 35)	Europe (n = 306)	*P*-value
Gender			
Male	27 (77.1)	198 (64.7)	0.41
Female	7 (20.0)	102 (33.3)	
Third-gender/non-binary	0	1 (0.3)	
Not disclosed	1 (2.9)	5 (1.6)	
Professional group and specialist practice area:			
Electrophysiologist	16 (45.7)	93 (30.4)	0.08
Other cardiologists	19 (54.3)	149 (48.7)	
Physician with specialty other than cardiology	0	33 (10.8)	
Nurse or allied health professional working in general cardiology	0	10 (3.3)	
Nurse or allied health professional working in electrophysiology arrhythmias	0	16 (5.2)	
Respondents' specialist area of interest in AF management (they could choose more than 1 specialty)			
Arrhythmias/electrophysiology and devices	26 (74.3)	171 (55.9)	0.04[a]
General cardiology	24 (68.6)	183 (59.8)	0.31
Heart failure	18 (51.4)	113 (36.9)	0.10
Valvular disease	5 (14.3)	42 (13.7)	0.93
Imaging	6 (17.1)	48 (15.7)	0.82
Interventional cardiology	2 (5.7)	33 (10.8)	0.35
Cardiovascular prevention	4 (11.4)	61 (19.9)	0.23
Congenital heart disease	3 (8.6)	16 (5.2)	0.41
Stroke	2 (5.7)	36 (11.8)	0.28
Other	0	15 (4.9)	0.18
Number of years practicing in this specialty			
<5 years	3 (8.6)	53 (17.3)	0.15
5–10 years	10 (28.6)	63 (20.6)	
10–20 years	7 (20.0)	91 (29.7)	
20–30 years	12 (34.3)	83 (27.1)	
>30 years	3 (8.6)	48 (15.7)	
Hospital designation			
University hospital/academic teaching hospital	16 (45.7)	182 (59.5)	0.18
Non-academic teaching hospital	8 (22.9)	43 (14.1)	
Community or district hospital	8 (22.9)	39 (12.7)	
Specialized Heart Center	2 (5.7)	16 (5.2)	
Other settings	1 (2.9)	26 (8.5)	

[a]*P* <0.05

of categorical data were calculated using χ^2 analysis, except for where the expected cell counts were ≤5 where Fischer's exact test was used. Throughout, a *P*-value of <0.05 indicated statistical significance.

Qualitative data analysis of free text responses was undertaken using conventional content analysis involving both deductive and inductive reasoning with coding undertaken to identify themes and categories within the text [8]. Analysis was undertaken by EB and GL, with thematic saturation reached after approximately 200 responses and the qualitative data were managed using NVivo v.11.

RESULTS

A total of 451 responses were received, with 376 responses from 29 European countries and 75 responses submitted from outside the EU, and 37 responses submitted with no data, and these were excluded from analysis as per the study eligibility criteria. A total of 341 responses were included in the data analysis with 44% of responses received from the UK, Spain, and Ireland, followed by 10% (n = 35) of responses from Poland. No statistical differences were seen between Poland and the other countries in terms of gender, number of years in their specialty, and their workplace (Table 1). The Polish responses were from electrophysiologists (n = 16, 46%) and cardiologists (n = 19, 54%) with no responses from allied health professionals. Polish participants reported their specialty as electrophysiologists (74%) and general cardiologists (69%) (respondents could include more than one specialty in their answer) and ranged from fewer than five years of experience (9%), with the majority having 20 to 30 years of experience (34%).

Regarding current clinical practice for multimorbidity and AF management, the analysis was undertaken by comparing all responses (n = 341) to Poland (n = 35) and the rest of Europe (n = 306) (Table 2). No statistical difference was seen in the number of AF patients seen per month ($P = 0.16$) or in the proportion of patients referred to other specialty services ($P = 0.20$). In terms of specialized services available, Polish respondents reported higher numbers of referrals for hypertension (57% in Poland vs. 37% in Europe, $P = 0.02$), arrhythmia/palpitation (63% vs. 41%, $P = 0.01$), and comprehensive geriatric assessment (14% vs. 35%, $P = 0.01$). Reasons for referral rates were explored and around half reported that this was the number that needed to be referred (44%), while resourcing was cited as an issue in 23% of Polish responses. Barriers identified in relation to resources included organizational/institutional issues (57%) and a lack of integrated models of care (more than 50%). The only difference between Poland and the rest of Europe was the barrier relating to insurance and financial reasons (31% in Poland vs. 11% in Europe, $P < 0.01$).

Table 2. Comparing current multimorbidity AF management in Poland and more widely across Europe

N (%)	Total sample (n = 341)	Poland (n = 35)	Europe (n = 306)	*P*-value
Typical numbers of AF patients seen per month				
<20	47 (13.9)	1 (2.9)	46 (15.0)	
20–50	169 (49.9)	16 (45.7)	154 (50.3)	0.16
51–100	87 (25.7)	13 (37.1)	74 (24.2)	
101–150	19 (5.6)	2 (5.7)	18 (5.9)	
>150	17 (5.0)	3 (8.6)	14 (4.6)	
What specialized outpatient services are available at your center?				
Atrial fibrillation	174 (51.3)	19 (54.3)	156 (51.0)	0.71
Heart failure	249 (73.5)	23 (65.7)	224 (73.2)	0.35
Hypertension	134 (39.5)	20 (57.1)	114 (37.3)	0.02[a]
Diabetes	177 (52.2)	19 (54.3)	158 (51.6)	0.77
Lipid	138 (40.7)	15 (42.9)	123 (40.2)	0.76
Anticoagulation	142 (41.9)	13 (37.1)	129 (42.2)	0.57
Syncope	106 (31.3)	12 (34.3)	94 (30.7)	0.68
Chest pain	146 (43.1)	13 (37.1)	134 (43.8)	0.45
Palpitations/arrhythmia/resynchronization	148 (43.7)	22 (62.9)	124 (40.5)	0.01[a]
Sleep apnea	110 (32.4)	7 (20.0)	103 (33.7)	0.10
Comprehensive geriatric assessment (dementia, falls, frailty, etc.)	116 (34.2)	5 (14.3)	109 (35.6)	0.01[a]
Other	17 (5.0)	1 (2.9)	23 (7.5)	0.31
What proportion of patients with comorbidities are referred to other specialty services?				
Over 80%	7 (2.1)	0	7 (2.3)	0.20
61%–80%	12 (3.5)	1 (2.9)	11 (3.6)	
41%–60%	55 (16.2)	10 (28.9)	45 (14.7)	
20%–40%	104 (30.7)	10 (28.9)	96 (31.4)	
Fewer than 20%	123 (36.3)	9 (25.7)	114 (37.3)	
No response	38 (11.2)	5 (14.3)	33 (10.8)	
What is the reason for this referral rate?				
That is the number that needs referring	151 (44.5)	19 (54.3)	132 (43.1)	0.09
Resourcing issue so I need to be selective and prioritize	61 (18.0)	8 (22.9)	53 (17.3)	
There is an established process with the relevant specialties	73 (21.5)	3 (8.6)	70 (22.9)	
Other	16 (4.7)	0	17 (5.6)	
No response	38 (11.2)	5 (14.3)	34 (11.1)	
What are the barriers within your current practice which potentially impact patient outcomes?				
Lack of integrated model of care for complex patients with AF	174 (51.3)	19 (54.3)	156 (51.0)	0.70
Lack of evidence-based guidelines	41 (12.1)	2 (5.7)	39 (12.7)	0.23
Lack of applicability of guidelines to my current practice	31 (9.1)	3 (8.6)	28 (9.2)	0.92
Lack of time	123 (36.3)	16 (45.7)	107 (35.0)	0.21
Organizational/institutional	145 (42.8)	20 (57.1)	125 (40.8)	0.06
Insurance/financial reasons	43 (12.7)	11 (31.4)	33 (10.8)	0.001[a]
Patient adherence/compliance	126 (37.2)	12 (34.3)	115 (37.6)	0.71
Treatment-related adverse events	36 (10.6)	4 (11.4)	32 (10.5)	0.85
Other	21 (6.2)	0	20 (6.5)	0.12

[a]*P* <0.05

Abbreviations: AF, atrial fibrillation

Free-text comments were included as part of the analysis, and 229 responses were completed and coding was undertaken with 56 codes identified, and these were refined into 38 codes (coding in qualitative research involves labeling and organizing the data to identify different themes). The four identified themes highlight the lack of integrated comorbid AF management and the themes were:

- Improving access to lifestyle and health promotion interventions, including the early management of risk factors or comorbidities (this relates to risk factor modification and the need for patient education including around weight loss management and medication adherence, for example),
- Organizational restructuring to enable innovation in care provision (this includes inflexibility in the existing systems and institutional governance along with unclear pathways for managing and treating comorbidities),
- Working towards achieving an evidence-based and integrated approach to multimorbidity and AF care for all (achieving consensus on core components of care in the standardized practice approach, with most respondents advocating for the integrated model of care as this would be expected to have the greatest impact on patient outcomes),
- Aiming for greater collaboration and interdisciplinary working, especially between cardiologists and primary care/geriatrics clinicians as well as building the specialist workforce, increasing the scope of practice for nurses and allied health professionals, and working with primary care clinicians.

DISCUSSION

The findings from this survey demonstrate the current issues with multimorbidity and AF across Europe and highlight Poland in relation to other countries: (1) higher access to hypertension or arrhythmia specialists in the outpatient setting contrary to access to comprehensive geriatric assessment; (2) higher impact of reimbursement/financing issues on the patients' care, (3) apparent lower access to formalized multi-specialist AF care.

Low access to geriatricians for Polish patients is not new as, according to the data presented in 2022 by the Supreme Medical Chamber (the main Polish office of physicians' self-government), their number is more than 10-fold lower than the number of Polish cardiologists: 555 vs. 5139 (circ. 14.7/million vs. 135.9/million people), respectively [9.] This number is comparable to Denmark (15.7/million) but markedly lower than in France (37.3/million) or Italy (49.6 /million) [10]. The Ministry of Health recognized that there are fewer specialist physicians within geriatrics compared to other areas and have been promoting it among graduates of medical schools for years, for example, through special financial incentives, among others, so far with mixed results as shown in our analysis. On the other hand, geriatrics is an independent specialization in Poland contrary to e.g. Greece or Portugal where it is recognized as a competence rather than a specialization [11].

Since the majority of responses came from university/teaching hospitals both in Poland and the rest of Europe, there was generally a high representation of arrhythmia specialists in both cohorts. The 2016 EHRA White Book placed Poland among countries with good access to device therapy and average access to ablation [12]. Theoretically, one could extrapolate this information and assume relatively easy access to an arrhythmia specialist for Polish patients at least in comparison to a geriatrician. There is also a potential field of professional conflict between cardiologists and geriatricians who reduce the number and doses of drugs that improve prognosis. Lack of reimbursement for non-vitamin K oral antagonist oral anticoagulants (NOACs) remains a challenging issue for some of Polish patients, especially in cases of multimorbidity-derived polypharmacy and rising costs of subsequent drugs and may result in their lower prescription [13, 14]. Universal health insurance provided by the national monopolist — the National Health Fund (NHF) covers hospital bills based on disease-related groups and outpatient visits on a modifiable fee-for-service basis [15]. In both cases, the overall lump sum offered by the NHF has a cap and normally does not cover the costs of all services, and proposed tariffs are substantially lower than expected. As a result, costs incurred by healthcare providers that exceed this cap are in general not reimbursed by the NHF. This leads to patient queuing and waiting lists lasting up to several months or even years across all specialties. Separate specializations have their own lump sums and separate caps. This, together with a general preference of Polish patients to be treated by a "specialist", results in even longer waiting times for a specialist consultation, therefore, hampering most attempts at any coordinated AF care. So far, in Poland, there is one real program for coordinated cardiac care with distinctive rules and financing, and it is dedicated to patients with myocardial infarction [16, 17]. Its results are very promising and may lead to other programs of coordinated cardiac care [18]. Yet for now, there are reports of discrepancies and even different outcomes of AF treatment among patients living in different parts of Poland [14, 19, 20].

The survey clearly demonstrates the challenges in treating and managing AF patients with comorbidities, reflecting the findings from the main survey across Europe [21]. AF is not alone in this challenge, with previous research identifying the need for an interdisciplinary, patient-centered approach to multimorbidity care that optimizes health-related quality of life via the development of self-efficacy through shared health-related goal setting [3–6].

A systematic approach to assessing AF patients' multimorbidity and its impact on patient health and decision-making is warranted. The survey results suggest that this approach is the first of multiple steps needed to achieve a sustained improvement in patient health status. Organizational structures and governance are required to integrate AF and multimorbidity care with more interdisciplinary working practices. Key to this is ongoing education for both patients and clinicians considering chronic disease management and medicines optimization as well as long-term behavioral changes in relation to associated risk factors.

Risk factor identification and management are crucial in AF and should be reviewed regularly. However, due to the lack of protocolized care, it is often unclear who is responsible for this (i.e. cardiologist or general practitioner, for example) [22, 23]. One solution is a hospital-based AF coordination center that would support primary care physicians and hospital-based specialists in coordinating and streamlining AF care [24]. Previous pan-European studies investigating the provision of healthcare over geographically diverse areas have shown the potential impact of these variations on health inequality [25, 26].

Medication management and medicine optimization play an important role in AF management. Previous research has identified that approximately 20% of patients with two comorbidities are prescribed between four and nine medications, with 1% prescribed 10 or more medications [27]. Primary care physicians have previously highlighted the challenge of managing polypharmacy where medications are commenced by specialty clinicians [28, 29]. The lack of a standardized approach and good communication between acute and community services has been noted and highlights the need for better collaborative partnerships [28]. In older people, results from the STOPP-START study showed the benefits of greater interdisciplinary working between geriatricians and pharmacists in reviewing polypharmacy and complex drug regimens with the implementation of evidence-based tools [28, 30, 31].

Integrated care in AF can include several specialists, but critically the patient needs to be included in the decision-making. Previous research has highlighted that communication between clinicians and patients, and between clinicians from different disciplines, is often poor and identified a relationship between substandard communication

and patient outcomes [32, 33]. Ensuring continuity of care has been shown to improve both the patient experience and patient outcome [34, 35]. A coordinated approach to managing older AF patients with multimorbidity is important, and there is a need to involve different specialties, with a particular emphasis on gerontological expertise and communication between clinicians and patients [36]. Shared decision-making is central to optimizing patient outcomes, including improving quality of life and behavioral changes relating to known AF risk factors [37–40].

Limitations

Some limitations need to be acknowledged. Firstly, the sample size from Polish healthcare professionals was low and may not be representative of healthcare professionals across Poland, especially due to the high representation of physicians based in academic/teaching hospitals. We did not collect the ages of respondents, and this may be construed as a limitation. The survey was administered via EHRA and, therefore, does not include the opinions of those who are not members of EHRA. Although we captured results from many respondents across Europe, the results may not be generalizable. There was a low response rate from allied health professionals, which needs to be acknowledged, which highlights issues regarding AF care across Europe and the lack of a multidisciplinary approach.

CONCLUSION

The results of the survey highlighted the current state of clinical practice in the management of multimorbidity and Atrial Fibrillation in Poland and across Europe. There are clearly varying levels of specialist services available as well as evidence demonstrating the lack of a systematic approach to multimorbidity management. The respondents highlighted the need for more collaborative working, education, and improved patient self-efficacy. Integrated management of Atrial Fibrillation-related comorbidities is clearly warranted, and these results will inform the next phases of the EHRA-PATHS study.

Article information

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