

Editors' highlight picks from 2023 in EHJ Open

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EHJ Open has just completed its Volume 3. Since three is the smallest number needed to create a pattern, the *EHJ Open* Section Editors have now started the process of shaping the journal for both authors and readers. Looking back at 2023, we see a pattern of increasing numbers of submissions and publications and also an escalating interest in the journal's content. *Figure 1* depicts the *EHJ Open* Volume 3 articles receiving the most attention in 2023, as measured by Altmetric Attention Score. In this editorial, the Section Editors have summarized some of the highlights, and also wanted to thank all Authors, Readers, Associate Editors, and Reviewers for sculpting Volume 3 and leading us into the 4th Volume.

The section on **Epidemiology & Prevention** highlights that the distribution of potentially modifiable risk factors differs between highincome European countries (Belgium, France, and England), compared with South Africa and Uganda. The data on the risk score was prospectively collected, and the results reveal that compared to Europe which has more metabolic factors that contribute to the risk score, unhealthy dietary patterns, low physical activity, and a higher waist-hip ratio were more prevalent in South Africa.⁵ Understanding the distribution is key for targeted interventions that can lower future cardiovascular disease for entire populations.⁶

EHJ Open also has a specific section focusing on *Cardiovascular Genetics* with applicability to all subjects covered in the journal. In this context, Mendelian randomization (MR) adds a causal dimension to studies of cardiovascular risk.⁷ As an example, MR analysis supported that short sleep duration increases peripheral artery disease.⁸ The common paths of *Vascular Medicine* and *Coronary Artery Disease* were illustrated in *EHJ Open* by carotid and coronary atherosclerosis being associated with an estimated 24 h sodium excretion,⁹ for which the underlying mechanisms remain to be fully explored.¹⁰

The latter observations were linked to **Hypertension**, a subject also dedicated to an *EHJ Open* section. A study evaluating the prognostic impact of the absence vs. presence of hypertension-mediated organ damage (left ventricular hypertrophy, carotid plaques, and chronic kidney disease) showed that ageing, the magnitude of insulin resistance, antiplatelet therapy, and multiple sites with hypertension-mediated organ damage were associated with future cardiovascular events, whereas a negative association was found with renin–angiotensin system blocker drugs.¹¹ This study extends previous observations¹² and suggests how cardiovascular risk assessment can be improved in clinical practice by using readily available information.

Environmental pollution may alter dietary exposome towards increased cardiovascular risk.¹³ As an example, serum arsenic levels may provide a concentration-dependent link between fish intake and hypertension, for which a causal mechanism was shown in a mouse model.¹⁴ Further **Translational Basic Science** from Volume 3 reinforced the important role of lipids, showing that very low-density lipoprotein can alter intracellular fatty acid ratio of arachidonic to docosahexaenoic acid (AA/DHA) in C4+ T cells, which promoted Th1-skewing and atherosclerosis.¹⁵ Interestingly, a recent large meta-analysis indicated that plant-based diets lower atherogenic lipoproteins and cardiovascular risk.¹⁶ How diet and its fatty acid content influence T-cell-mediated inflammation and atherosclerotic burden warrants further investigation.

Cardiac amyloidosis (CA), a progressive infiltrative disease caused by the cardiac deposition of amyloid fibrils,¹⁷ has received attention in EHJ Open 2023 across sections. In **Valvular Heart Disease**, EHJ Open presented a State-of-the-Art review on the association of CA with aortic stenosis, from pathophysiology to treatment.¹⁸ Furthermore, in **Arrhythmia & Electrophysiology**, Ullah *et al.* used nationwide health data to conclude that atrial fibrillation ablation was associated with

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First author	Title	Ref	Altmetric score*
Yuan <i>et al.</i>	Sleep duration, daytime napping, and risk of peripheral artery disease: multinational cohort and Mendelian randomization studies.	8	547
Wuopio <i>et al</i> .	The association between sodium intake and coronary and carotid atherosclerosis in the general Swedish population	9	460
Banach <i>et al</i> .	Dietary salt intake and atherosclerosis: an area not fully explored	10	257
Katsoularis <i>et al</i> .	Risk of arrhythmias following COVID-19: nationwide self-controlled case series and matched cohort study	1	215
Bonekamp <i>et al</i> .	Physical exercise volume, type, and intensity and risk of all-cause mortality and cardiovascular events in patients with cardiovascular disease: a mediation analysis	2	[19]
Jaiswal et al.	Cardiac amyloidosis and aortic stenosis: a state- of-the-art review	18	160
Miller <i>et al</i> .	Effectiveness of icosapent ethyl on first and total cardiovascular events in patients with metabolic syndrome, but without diabetes: REDUCE-IT MetSyn	3	109
Kaushal et al.	Intramyocardial cell-based therapy with Lomecel- B during bidirectional cavopulmonary anastomosis for hypoplastic left heart syndrome: the ELPIS phase I trial	4	99

Figure 1 EHJ open publications from 2023 with highest altmetric attention score (data sourced from app.dimensions.ai, accessed 5 February 2024).¹⁻⁴

significantly higher net adverse clinical events in patients with CA,¹⁹ albeit atrial fibrillation catheter ablation remains effective to maintain sinus rhythm in patients with CA.²⁰ Finally, novel findings on **Vascular & Cardiac Imaging** of CA include a suggested novel echocardiographic risk score²¹ and CA prognostic prediction by cardiac magnetic resonance imaging (cMRI).²²

The latter section also includes an article showing that low preoperative left atrial reservoir strain was a risk factor for after coronary artery bypass grafting (CABG) ischaemic stroke in 542 patients over a median follow-up of almost 4 years, independently of the occurrence of postoperative atrial fibrillation (POAF).²³ This work considerably refines the insights from Butt *et al.*²⁴ about the prognostic value of POAF in CABG patients regarding stroke events. POAF complicates 20–40% of cardiac surgical procedures. Underlying mechanisms are incompletely defined but include intraoperative and postoperative phenomena, such as inflammation, sympathetic activation, and cardiac ischaemia.²⁵ The EHJ Open section on **Interventional Cardiology & Cardiac Surgery** introduced that the arterial stiffness measure cardio ankle vascular index (CAVI) predicted POAF after surgical aortic valve stenosis replacement.²⁶

Results stemming from a retrospective cohort of 4659 patients who underwent transcatheter aortic valve implantation (TAVI) at two highvolume, early adopter centres, in the United States and in Germany, the main finding was a correlation between right ventricular (RV) stimulation rates and higher risk for all-cause mortality and heart failure-related hospitalizations at 1-year.²⁷ These findings were independent of previously implanted pacemaker, suggesting a direct association between non-physiological ventricular activation and adverse clinical outcomes. The study addressed one of highly debated topics during this past year, namely the clinical impact of pacemaker stimulation in TAVI recipients, adding evidence to extend and confirm similar preliminary findings from a single-centre study, also confirming the previous evidence about the role played by pre-existing right bundle branch block as independent predictor of the need for pacemaker stimulation after TAVI, transposing the association to the rate of RV stimulation.^{28,29} Along the same line, they also confirm that implantation depth and postdilatation of the aortic prosthesis independently predict the need for pacing, supporting the findings from a multidisciplinary research group from Ghent University. In fact, using advanced in-silico modelling, they provided a mechanistic explanation of the impact exerted by the contact pressure generated with self-expandable aortic prostheses and the development of new conduction abnormalities.³⁰

Cardio-oncology represents one of the **Special Populations** in a dedicated *EHJ Open* section, in which a prospective cohort study of 47 women with newly diagnosed stage 1–3 human epidermal growth factor receptor (HER) 2-positive breast cancer showed that

HER2-directed therapy alone had no major effect on vascular reactivity and vascular biomarkers, but the addition of anthracycline/cyclophosphamide can lead to a deterioration in vascular and cardiac function.³¹ These results fill a part of the gap in knowledge of the emerging problem of vascular effects of cancer therapies.³² Pelosi et al. showed that adults with Adult Congenital Heart Disease (ACHD), especially those with moderate/severe ACHD have an optimistic view of their life-expectancy and clearly more optimistic than their cardiologist.³³ In addition, growing attention is warranted for discussions on end-of-life and patients' life-expectancy to improve care.³⁴ Takotsubo syndrome (TTS) can be complicated by cardiogenic shock (CS), which represents one of the leading causes of mortality in TTS.³⁵ In a multicentre observational registry, the use of Heart Failure treatment with intra-aortic balloon counterpulsation was however not associated with lower mortality rates at short- and long-term follow-up in patients with TTS and CS.³⁶

These editors' highlight picks from 2023 illustrate the breadth of topics covered by *EHJ Open*. Stay tuned to #EHJOpen for more content. Among the new year's resolutions, novel research results should soon become available to further promote open and interactive cardiology for an accelerated and global sharing of cardiovascular science.

Data availability

There are no new data associated with this article.

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