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Each year, the *Heart* editorial team selects the most meritorious research paper from the preceding year to receive the *Heart Best Research Paper Award*. Our initial considerations are the number of citations, number of readers and Altmetric score for each paper. Then the editorial team selects the winner and finalists based on the relevance of the clinical question addressed by the research, the quality of the research study design and data presentation, and the potential long-term impact of the research findings.

Among the many outstanding research papers in *Heart* published in 2021, we selected one winner and two finalists for the 2022 *Heart Best Paper Award*. We sincerely congratulate the first author and the entire research team for each of these publications (table 1). In this article, the winner and finalists provided their professional background and summarised the research goals and the key findings of their studies.

WINNER

Ki-Chul Sung, MD, PhD (figure 1), is a clinical cardiologist whose research focus is mainly on preventive cardiology. He currently is a professor at Sungkyunkwan University, Kangbuk Samsung Hospital, Seoul, Korea. Inspiration for the current research came from the many patients with a high level of coronary artery calcium (CAC, a reliable marker of atherosclerotic cardiovascular disease) despite the lack of traditional risk factors leading patients to question what caused the CAC. This study was conducted to answer that question appropriately.



Figure 1 Ki-Chul Sung.

“We found a positive, graded association between physical activity and the prevalence and the progression of CAC, regardless of baseline CAC scores. Although our findings do not question the well-established cardiovascular benefits of physical activity, both patients and physicians need to consider that engaging in physical activity may accelerate the progression of coronary calcium, possibly due to plaque healing, stabilisation and calcification. Thanks to the dedication of Dr Hong (Yun Soo Hong) and many other coresearchers, we were able to win this award and the honour belongs to the entire proud research team.”

FINALISTS

Markus Schwerzmann, MD (figure 2), is associate professor and clinician scientist at the University Hospital Inselspital in Bern, and leads the Adult Congenital Heart Disease (ACHD) unit. He sees



Figure 2 Markus Schwerzmann.

research as a complementary way besides clinical excellence to improve the long-term clinical outcomes of patients with ACHD. Research in ACHD relies on collaboration among different centres and the present paper on clinical outcome of COVID-19 is an excellent example of how working together is an effective way to achieve meaningful results within a reasonable time.

“Previously, COVID-19 risk stratification in patients with ACHD was based on expert opinion. This cohort study provides observational evidence regarding COVID-19 risk factors in patients with ACHD and improves tailoring of recommendations for preventive measures in individual patients. It was reassuring to see that only few ACHD lesions



Figure 3 Natalie Glaser.

Table 1 Heart Best Research Paper Award winner and finalists 2022

Winner		
Ki-Chul Sung, Yun Soo Hong, Jong-Young Lee, Seung-Jae Lee, Yoosoo Chang, Seungho Ryu, Di Zhao, Juhee Cho, Eliseo Guallar, Joao A C Lima	Physical activity and the progression of coronary artery calcification	<i>Heart</i> 2021;107(21):1710–1716. PMID: 34544807
Finalists		
Markus Schwerzmann, Francisco Javier Ruperti-Repilado, Helmut Baumgartner, Berto Bouma, Judith Bouchardy, Werner Budts <i>et al</i>	Clinical outcome of COVID-19 in patients with adult congenital heart disease	<i>Heart</i> 2021;107(15):1226–32. PMID: 33685931
Natalie Glaser, Veronica Jackson, Per Eriksson, Ulrik Sartipy, Anders Franco-Cereceda	Relative survival after aortic valve surgery in patients with bicuspid aortic valves	<i>Heart</i> 2021;107(14):1167–1172. PMID: 33622679

(unrepaired cyanotic defects or Eisenmenger syndrome) were at particularly high risk. For most patients, general risk factors (age, obesity and multiple comorbidities) were the main reasons for a complicated COVID-19 course—but not necessarily the cardiac defect by itself.”

Natalie Glaser, MD, PhD (figure 3), is a clinical researcher at Karolinska Institutet and a resident in cardiology at Stockholm South General Hospital in Stockholm, Sweden. Her research is mainly focused on different aspects of aortic valve disease. She is driven by trying to answer research questions that arise in her daily patient meetings, and by doing research that can be directly implemented in clinical practice to benefit our patients.

“This study showed that the survival rate following aortic valve surgery in patients with bicuspid aortic valves is excellent and similar to that of the general population. These findings could facilitate patient education and counselling as well as clinical decision-making in patients with bicuspid aortic valves who will undergo, or who have undergone aortic valve surgery.”

Join me in congratulating the Best Research Paper winner and finalists for their excellent contributions to clinical cardiology!

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