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AUTHORS' CONTRIBUTIONS

V. Ruiz Pizarro wrote the first draft of the manuscript and created the figures. J. Álvarez Rubio, T. Ripoll-Vera, and M.J. Soleto Roncero provided comments on subsequent modifications and reviewed the final version.

CONFLICTS OF INTEREST

J. Álvarez Rubio declares having received fees for presentations from Amicus Therapeutics and Shire. The rest of the authors have no conflicts of interest regarding this article.

Virginia Ruiz Pizarro,[a,*] Jorge Álvarez Rubio,[a,b] María Jesús Soleto Roncero,[c] and Tomás Ripoll-Vera[a,b]

[a]*Servicio de Cardiología, Hospital Universitario Son Llàtzer, Palma de Mallorca, Illes Balears, Spain*

[b]*Instituto de Investigación Sanitaria Illes Balears (IdISBa), Palma de Mallorca, Illes Balears, Spain*

[c]*Servicio de Radiodiagnóstico, Hospital Universitario Son Llàtzer, Palma de Mallorca, Illes Balears, Spain*

[*] Corresponding author.
E-mail address: virginia.ruizpizarro@gmail.com (V. Ruiz Pizarro).

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Which patients could benefit from the use of bempedoic acid in clinical practice?

¿Qué pacientes pueden beneficiarse del ácido bempedoico en la práctica clínica?

To the Editor,

Control of low-density lipoprotein cholesterol (LDL-C) is essential for reducing the risk of cardiovascular complications. Unfortunately, most patients, especially those at high risk (eg, patients with ischemic heart disease), have insufficiently controlled lipid levels.[1,2] Although one of the main reasons for nonachievement of LDL-C goals is insufficient use of lipid-lowering treatments, with data showing very low prescribing rates for combination therapy (high-intensity statins and ezetimibe) and proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitors,[1,2] data from the DA VINCI study indicates that a significant proportion of patients on optimal lipid-lowering therapy do not achieve their goals.[2] New drugs are thus needed for clinical practice settings. Bempedoic acid is a new, first-in-class, oral lipid-lowering drug that reduces intracellular cholesterol by inhibiting adenosine triphosphate citrate lyase, an enzyme in the cholesterol biosynthesis pathway.[3] Determining how many patients might benefit from the addition of bempedoic acid in clinical practice is important. A recent publication providing practical guidance on the use of bempedoic acid according to cardiovascular risk in patients with dyslipidemia offers useful insights into which patients stand to benefit most.[3]

To estimate the proportion of patients who could derive the greatest benefit from treatment with bempedoic acid, a Spanish study analyzed LDL-C control levels in patients 12 months after an acute coronary syndrome. The patients (n = 6364) were from 20 cardiology departments at secondary and tertiary care hospitals in Spain. (Informed consent was not required as the data were population-based.) The patients had a mean age of 73.3 ± 10.6 years and 61.5% were men. LDL-C levels were > 70 mg/dL (the target cutoff at the time) in 44.1% of patients and > 100 mg/dL in 16.1% (28% had a level between 70 and 100 mg/dL).[4] The lipid-lowering treatments being used in the subgroup of patients with LDL-C > 70 mg/dL 12 months after the acute coronary syndrome are summarized in table 1.

Table 1
Lipid-lowering treatments in patients with LDL-C > 70 mg/dL 12 months after an acute coronary syndrome

	Patients with LDL-C > 70 mg/dL (n = 2806, 44.1%)	All patients (n = 6364, 100%)
No statins	396 (14.12)	396 (6.2)
High-intensity statins	1372 (48.9)	1372 (21.6)
High-intensity statins + ezetimibe	1036 (36.9)	1036 (16.3)
High-intensity statins + PCSK9 inhibitors	1 (0.04)	1 (0.01)
High-intensity statins + ezetimibe + PCSK9 inhibitors	1 (0.04)	1 (0.01)

LDL-C, low-density lipoprotein cholesterol; PCSK9, proprotein convertase subtilisin/kexin type 9.
Data are shown as No. (%) of patients.

According to therapeutic positioning reports published by the Spanish Agency of Medicines and Medical Devices (AEMPS), PCSK9 inhibitors are funded by the public health care system when used in patients with atherosclerotic cardiovascular disease and LDL-C > 100 mg/dL.[5] Accordingly, and even though bempedoic acid can be combined with PCSK9 inhibitors to improve LDL-C control,[3] the subgroup of patients who would derive the greatest benefit from bempedoic acid treatment would be those with an LDL-C level above recommended targets (> 70 mg/dL in our study) but below 100 mg/dL.[4] Our results show that much remains to be done to optimize lipid-lowering therapy, and we believe that bempedoic acid can contribute to LDL-C goal attainment. Combination therapy with ezetimibe and bempedoic acid might be particularly beneficial in patients not taking statins because of intolerability issues (6% of all patients), with estimates showing an overall reduction of 38% in LDL-C.[3] Addition of bempedoic acid to high-intensity statins plus ezetimibe (used in 16% of all patients) could result in an additional 7% reduction (and an overall reduction of 72% from baseline).[3]Finally, patients on high-intensity statins (22%) would stand to benefit from an additional reduction of 15% if also treated with bempedoic acid, and ezetimibe could be added in certain cases.

Our results show that a significant proportion of patients could benefit from bempedoic acid. Considering that stricter LDL-C goals have now been introduced, the potential reductions are even higher (in the DA VINCI study, LDL-C goal attainment decreased from 45% to 22% in secondary prevention patients).[2] Because bempedoic acid is a prodrug that requires activation by long-chain acyl-CoA synthetase 1, which is expressed in the liver but not the muscles, it carries a lower risk of adverse muscle effects and may therefore provide added value as a long-term treatment due to better tolerability.[3] While the ongoing CLEAR Outcomes study will clarify the effects of bempedoic acid on cardiovascular events, analysis of secondary outcomes from other studies suggests that this drug is associated with a lower risk of cardiovascular complications and new-onset diabetes.[6]

In brief, bempedoic acid is a new class of agent that will undoubtedly contribute to improved lipid control, especially in patients at higher cardiovascular risk.

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V. Barrios and C. Escobar analyzed the data and wrote and approved this manuscript.

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Vivencio Barrios[a,*] and Carlos Escobar[b]

[a]*Servicio de Cardiología, Hospital Universitario Ramón y Cajal, Madrid, Spain*
[b]*Servicio de Cardiología, Hospital Universitario La Paz, Madrid, Spain*

* Corresponding author:
E-mail address: vivenciobarrios@gmail.com (V. Barrios).

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Survival after out-of-hospital cardiopulmonary resuscitation before ambulance arrival in the Basque Country

Supervivencia tras reanimación cardiopulmonar extrahospitalaria previa a la llegada del primer recurso asistencial en el País Vasco

To the Editor,

The chances of surviving an out-of-hospital cardiopulmonary arrest (CPA) can be increased by the execution of 1 tasks by nonprofessional bystanders: immediate activation of the emergency services, good quality cardiopulmonary resuscitation (CPR), and, when possible, the use of a public-access defibrillator. Execution by bystanders of these first links in the survival chain, without waiting for the ambulance to arrive, can maximize the chances of a successful outcome of subsequent advanced life-support interventions.

The goal of this study was to determine the differences in survival and other epidemiological characteristics between CPA patients who received CPR before ambulance arrival and those who did not.

We report the results of an observational study conducted in the Basque Country. The study population included all CPA patients with an indication for CPR who were attended by the emergency ambulance services between June 2016 and May 2018 (digitized data are not available after this date). The study was approved by the Basque Research Ethics Committee. Informed patient consent was not required because the data were extracted