

A Strategic Roadmap to Support Communication on and Acceptance of Surrogate Endpoints: The RENal Surrogacy accEpTance in Chronic Kidney Disease (RESET CKD) Collaboration

Authors

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Supplemental table S1: Case studies to evaluate evidence requirements to support surrogate acceptance by payers in scope markets

Surrogate endpoint	Final endpoint	Drug	Indication statement	Evidence submitted to support surrogate endpoint	Regulatory outcome				Payer and Reimbursement outcome						
					FDA	EMA	PDMA	NMPA	China	England	France	Germany	Japan	Scotland	Spain
HbA1c	All-cause mortality	Dapagliflozin and metformin	In adults aged 18 years and older with T2DM to improve glycemic control	Level 3: Meta-analysis	2014	2014	2014	Mar 2017	Listed in 2022 NRDL	Jun 2013	Apr 2014	Feb 2014		Aug 2014	Oct 2020
LDL-C	Cardiovascular complications	Alirocumab	Adults with primary hypercholesterolaemia or mixed dyslipidaemia, as an adjunct to diet: in combination with a statin or statin with other lipid lowering therapies alone or in combination with other lipid-lowering therapies.	Level 3: meta-analyses of individual patient data	Jan 2021	Jul 2015	Jun 2016			Jun 2016	Apr 2016	May 2019		Aug 2016	Oct 2020
Invasive disease-free survival	Overall survival	Olaparib	Adjuvant treatment of HER2-negative high-risk early breast cancer that has been treated with neoadjuvant or adjuvant chemotherapy in adults with germline BRCA1 or 2 mutations.	Level 1 (biological plausibility)	Mar 2022	Jun 2022	Aug 2022			May 2023	Jan 2023	Feb 2023			
Forced Vital Capacity	All-cause mortality	Nintedanib	Treatment of idiopathic pulmonary fibrosis	Level 3: Meta-analysis	2014	2015	2015	Sep 2017	2021	Jan 2016	May 2015	Sep 2015 Oct 2019		Sep 2015	Dec 2015
Time to platelet normalization	All-cause mortality	Caplacizumab	Treatment of adult patients with aTTP in combination with plasma exchange and immuno-suppressive therapy.	Level 2: retrospective cohort studies	2019	2018	2022			Dec 2020	Oct 2019 Oct 2021	Mar 2019		Sept 2020	Aug 2021
Total kidney volume	Renal decline and mortality	Tolvaptan	Slow kidney function decline in adults at risk of rapidly progressing autosomal dominant polycystic kidney disease	Level 2: RWE through open-label follow-up and longitudinal correlation study	2009	2015	2014			Oct 2015	Dec 2015 Jul 2019			Jan 2016	June 2017 May 2022
Bone mineral density	Fractures	Romosozumab	Treatment of severe osteoporosis in postmenopausal women at high risk of fracture.	Level 1: Biological plausibility	2019	2019	2019			May 2022	Mar 2021	Sept 2020		Nov 2020	Oct 2022

Green represents a positive outcome; Orange represents restricted access. Red represents negative outcome. White represents no data available. Hyperlinks to sources are embedded in the text.

aTTP, acquired thrombotic thrombocytopenic purpura; BRCA, breast cancer gene; EMA, European Medicines Agency; FDA, Food and Drug Administration; HbA1c, glycated haemoglobin (haemoglobin A1c); HER2, human epidermal growth factor receptor 3; LDL-C, low-density lipoprotein cholesterol; NMPA, National Medical Products Administration; PDMA, Pharmaceuticals and Medical Devices Agency; RWE, real-world evidence; T2DM, type-2 diabetes mellitus