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[C2H2206] Summary of cost-effectiveness evaluation of finerenone (Kerendia®)

1. Indications

Chronic kidney disease in type 2 diabetes (except end-stage kidney disease and dialysis)

2. Price of the drug

Finerenone has been reimbursed since May 2022 at JPY 149.10 for 10 mg and JPY 213.10 for 20 mg (as of March 2024). The price was calculated based on a cost-calculation method. This product was designated as an H1 cost-effectiveness evaluation item.

3. Scope of cost–effectiveness evaluation

This product is indicated for the treatment of chronic kidney disease in type 2 diabetes. The scope of evaluation agreed upon at the first session of the Expert Committee of Cost-Effectiveness Evaluation (ECCEE) is described below.

Population	People with chronic kidney disease in type 2 diabetes (except people with end-stage kidney disease and people receiving dialysis)
Comparator	Standard of care* *ACE inhibitors or ARBs
Other	The effectiveness of finerenone should be analyzed based on data from the Japanese population as well.

4. Evaluation of additional benefits

The manufacturer performed a systematic review of randomized controlled trials (RCTs) and identified five trials. Of these, they used FIDELITY analysis, a pooled

analysis of RCTs (FIDELIO-DKD and FIGARO-DKD) that included Japanese people, to evaluate additional benefits. They reported the results for the overall population in the primary analysis. Given the uncertainties in the estimation, the results for the Japanese population were reported as a scenario analysis (sensitivity analysis). Finerenone showed statistically significant efficacy for the composite cardiovascular endpoint and composite kidney endpoint in the overall population; thereafter, the manufacturer insisted on the additional benefits of finerenone over the comparator in the overall population. Also in the Japanese population, the hazard ratio (point estimate) for the composite cardiovascular endpoint (0.88 [95% CI: 0.52–1.49]) and composite kidney endpoint (0.9985 [95% CI: 0.70–1.42]) in the finerenone group was estimated to be < 1. Therefore, the manufacturer insisted on the additional benefits of finerenone over the comparators in the Japanese population.

The academic group judged that the additional benefit should not be evaluated independently for the overall population and Japanese population but that the results from both populations should be combined to determine additional benefits. The hazard ratio for the composite cardiovascular endpoint in the finerenone group was estimated to be < 1 in both the overall and Japanese populations *. Therefore, the academic group concluded that finerenone has additional benefits for the composite cardiovascular endpoint. In contrast, in the FIDELITY analysis, the academic group noted that the hazard ratio for the composite kidney endpoint was consistently ≥1 in the Japanese population (both the composite kidney endpoint and its components). Additionally, in the FIDELITY analysis, FIDELIO-DKD, and FIGARO-DKD trials, hazard ratios were consistently higher in the Japanese population than in the overall population. Even in the FIDELIO-DKD trial, which set the composite kidney endpoint as the primary endpoint, the hazard ratio for the composite kidney endpoint was 0.91. This result may indicate that the treatment effect of finerenone is not necessarily significant. Thus, the academic group could not determine from the available evidence whether finerenone had additional benefits for the composite kidney endpoint.

*The academic group interpreted HR=0.9985 for the composite kidney endpoint in the Japanese population of the FIDELITY analysis as synonymous with HR=1.

5. Results of the cost-effectiveness analysis

The manufacturer estimated the cost-effectiveness using the Markov model.

Model parameters, such as the transition probability and effect of finerenone, were estimated from the results of the FIDELITY analysis in the overall population. Given that the academic group could not conclude whether finerenone has additional benefits for the composite kidney endpoint in the currently available evidence, hazard ratios for treatment effects associated with the kidney endpoint in the model were revised to 1.0. Additionally, because previous epidemiological studies and the event rates in the FIDELITY analysis suggest that the risk of cardiovascular events in the Japanese population with chronic kidney disease is lower than those in the United States and Europe, there was concern that the cost-effectiveness of finerenone would be overestimated in the Japanese population. Therefore, cardiovascular risk factors were modified to include a 25% reduction in values among the overall population in the FIDELITY analysis. The value of 25% (correction coefficient: 0.75) was assumed to represent that "at least the level of risk reduction is certain to exist". The ECCEE accepted the following results:

Population	Comparator	Additional benefit	ICER (JPY/QALY)
People with chronic kidney disease in type 2 diabetes	Standard of care	· Cardiovascular endpoint: Additional benefit · Kidney endpoint: No additional benefit	7,130,185