

For the use of a Registered Medical Practitioner or a Hospital or a Laboratory only

Finerenone film-coated tablets

Kerendia™

10mg and 20mg film coated tablets

Warning: To be sold by retail under the prescription of Nephrologist/Cardiologist/Consultant Physician/ Diabetologist only

1. GENERIC NAME
Finerenone 10mg film-coated tablets Finerenone 20mg film-coated tablets
2. QUALITATIVE AND QUANTITATIVE COMPOSITION
Kerendia 10mg film-coated tablet Each film-coated tablet contains 10 mg Finerenone micronized.
Kerendia 20mg film-coated tablet Each film-coated tablet contains 20 mg Finerenone micronized.
3. DOSAGE FORM AND STRENGTH
Film-coated tablets. Kerendia 10 mg film-coated tablet Pink, oval-oblong tablet with a length of 10 mm and a width of 5 mm, marked '10' on one side and 'F1' on the other side Kerendia 20 mg film-coated tablet Yellow, oval-oblong tablet with a length of 10 mm and a width of 5 mm, marked '20' on one side and 'F1' on the other side
4. CLINICAL PARTICULARS

4.1 Therapeutic Indication

Finerenone is indicated to reduce the risk of sustained eGFR decline, end stage kidney disease, cardiovascular death, non-fatal myocardial infarction, and hospitalization for heart failure in adult patients with chronic kidney disease (CKD) associated with type 2 diabetes (T2D).

4.2 Posology and method of administration

4.2.1 Method of administration

Oral use

Tablets may be taken with a glass of water and with or without food.

Avoid taking Kerendia with grapefruit or grapefruit juice (see section 'Special warnings and precautions for use' and '4.5 Drugs Interactions').

For patients who are unable to swallow whole tablets, Kerendia tablet may be crushed and mixed with water or soft foods, such as applesauce, immediately prior to use and administered orally.

4.2.2 Dosage regimen

The recommended target dose of Kerendia is 20 mg once daily.

4.2.2.1 Initiation of treatment

Initiation of Kerendia treatment is recommended when serum potassium \leq 4.8 mmol/L. For monitoring of serum potassium, see '4.2.2.2 Continuation of treatment'.

If serum potassium $>$ 4.8 to 5.0 mmol/L, initiation of Kerendia treatment may be considered with additional serum potassium monitoring within the first 4 weeks based on patient characteristics and serum potassium levels (see section 'Special warnings and precautions for use').

If serum potassium $>$ 5.0 mmol/L, initiation of Kerendia treatment is not recommended (see section 'Special warnings and precautions for use').

Measure estimated glomerular filtration rate (eGFR) to determine the starting dose.

The starting dose of Kerendia is:

- 20 mg once daily if eGFR \geq 60 mL/min/1.73 m²
- 10 mg once daily if eGFR \geq 25 to $<$ 60 mL/min/1.73 m²

Initiation of Kerendia treatment is not recommended in patients with eGFR $<$ 25 mL/min/1.73 m² as clinical experience is limited.

4.2.2.2 Continuation of treatment

Four weeks after initiation or re-start or up-titration of Kerendia treatment, remeasure serum potassium and eGFR. See Table 1 to determine continuation of Kerendia treatment and dose adjustment.

Thereafter, remeasure serum potassium periodically and as needed based on patient characteristics and serum potassium levels (see section 'Special warnings and precautions for use' and '4.5 Drugs Interactions').

Table 1: Continuation of Kerendia treatment and dose adjustment

Serum potassium (mmol/L)	Kerendia dose (after 4 weeks and thereafter)
\leq 4.8	Maintain 20 mg once daily. For patients on 10 mg once daily, increase the dose to 20 mg once daily if eGFR has not decreased $>$ 30% compared to the prior measurement.
$>$ 4.8 – 5.5	Maintain dose.
$>$ 5.5	Withhold Kerendia. Restart at 10 mg once daily if serum potassium \leq 5.0 mmol/L.

4.2.2.3 Missed Dose

A missed dose should be taken as soon as possible after it is noticed, but only on the same day. If this is not possible, the dose should be skipped, and the next dose taken as prescribed. Two doses should not be taken to make up for a missed dose.

The maximum daily dose of Kerendia is 20 mg.

4.2.3 Additional information on special populations

4.2.3.1 Renal Impairment

Initiation of Kerendia treatment

In patients with eGFR $>$ 25 to $<$ 60 mL/min/1.73 m², the starting dose of Kerendia is 10 mg once daily. See section '4.2.2.1 Initiation of treatment'.

In patients with eGFR $<$ 25 mL/min/1.73m², initiation of Kerendia treatment is not recommended as clinical experience is limited (see section 'Special warnings and precautions for use').

Continuation of Kerendia treatment

In patients with mild, moderate or severe renal impairment, continue Kerendia treatment and adjust dose based on serum potassium. Measure eGFR 4 weeks after initiation to determine up-titration. See Table 1 and section '4.2.2.2 Continuation of treatment'.

In patients with end-stage renal disease (eGFR $<$ 15 mL/min/1.73 m²), continue Kerendia treatment with caution regarding serum potassium levels as clinical experience is limited (see section 'Special warnings and precautions for use').

4.2.3.2 Patients with Hepatic Impairment

In patients with severe hepatic impairment (Child Pugh C), avoid treatment with Kerendia (see section 'Special warnings and precautions for use and section 'Pharmacokinetic properties'). In patients with mild or moderate hepatic impairment, no initial dose adjustment is required (Child Pugh A or B) (see section 'Pharmacokinetic properties').

In patients with moderate hepatic impairment (Child Pugh B), consider additional serum potassium monitoring and adapt monitoring according to patient characteristics (see section 'Special warnings and precautions for use' and section 'Pharmacokinetic properties').

4.2.3.3 Patients taking concomitant medications

In patients taking Kerendia concomitantly with moderate or weak CYP3A4 inhibitors, potassium supplements, trimethoprim, or trimethoprim-sulfamethoxazole, consider additional serum potassium monitoring and adapt monitoring according to patient characteristics and make Kerendia treatment decisions as directed in Table 1. Temporary discontinuation of Kerendia when taking trimethoprim, or trimethoprim-sulfamethoxazole, may be necessary (see sections 'Special warnings and precautions for use' and '4.5 Drugs Interactions').

4.2.3.4 Pediatric patients

The safety and efficacy of Kerendia have not been established in patients under 18 years of age. Therefore, Kerendia is not recommended for use in pediatric patients.

4.2.3.5 Geriatric patients

No dose adjustment is required in the elderly (see section 'Pharmacokinetic properties').

4.2.3.6 Gender

No dose adjustment is required based on gender (see section 'Pharmacokinetic properties').

4.2.3.7 Body weight

No dose adjustment is required based on body weight (see section 'Pharmacokinetic properties').

4.2.3.8 Ethnic differences

No dose adjustment is required based on ethnic differences (see section 'Pharmacokinetic properties').

4.2.3.9 Smoking status

No dose adjustment is required based on smoking status (see section 'Pharmacokinetic properties').

4.3 Contraindications

Kerendia is contraindicated in patients:

- taking concomitant medications that are strong CYP3A4 inhibitors (e.g., itraconazole, ketoconazole, ritonavir, neflavin, cobicistat, clarithromycin, telithromycin and nefazodone) (see section '4.5 Drugs Interactions').

- with Addison's disease.

4.4 Special warnings and precautions for use

4.4.1 Hyperkalemia

Hyperkalemia has been observed in patients treated with Kerendia.

Some patients are at a higher risk to develop hyperkalemia. Risk factors include low eGFR, higher serum potassium and previous episodes of hyperkalemia. Consider more frequent monitoring in these patients.

Initiation of Kerendia treatment is not recommended if serum potassium $>$ 5.0 mmol/L. If serum potassium $>$ 4.8 to 5.0 mmol/L, initiation of Kerendia treatment may be considered with additional serum potassium monitoring within the first 4 weeks based on patient characteristics and serum potassium levels (see section 'Posology and method of administration').

Without Kerendia in treated patients if serum potassium $>$ 5.5 mmol/L. Follow local guidelines for the management of hyperkalemia. Restart Kerendia at 10 mg once daily if serum potassium \leq 5.0 mmol/L (see section 'Posology and method of administration').

Remeasure serum potassium and eGFR in all patients 4 weeks after initiation or re-start or up-titration of Kerendia treatment. Thereafter, remeasure serum potassium periodically and as needed based on patient characteristics and serum potassium levels (see section 'Posology and method of administration').

Concomitant medications

The risk of hyperkalemia also may increase with the intake of concomitant medications that may increase serum potassium (see section 'Drug Interactions' See also '4.4.4 Concomitant use of substances that affect finerenone exposure'.)

Avoid concomitant use of Kerendia with the following medications:

- potassium-sparing diuretics (e.g., amiloride, triamterene)
- other mineralocorticoid receptor antagonists (MRAs) (e.g., eplerenone, esaxerenone, spironolactone, canrenone)

Use Kerendia with caution and monitor serum potassium when taken concomitantly with the following medications:

- potassium supplements
- trimethoprim, or trimethoprim-sulfamethoxazole. Temporary discontinuation of Kerendia may be necessary.

4.4.2 Renal impairment

The risk of hyperkalemia increases with decreasing renal function. Ongoing monitoring of renal function should be performed as needed according to standard practice (see section 'Posology and method of administration').

Initiation of Kerendia treatment is not recommended in patients with eGFR $<$ 25 mL/min/1.73 m² as clinical experience is limited (see section 'Posology and method of administration').

Continue Kerendia treatment with caution regarding serum potassium levels in patients with end-stage renal disease (eGFR $<$ 15 mL/min/1.73 m²) as clinical experience is limited (see section 'Posology and method of administration').

4.4.3 Hepatic impairment

Patients with severe hepatic impairment (Child Pugh C) have not been studied. Due to an expected significant increase in finerenone exposure, avoid use of Kerendia in patients with severe hepatic impairment (see section 'Posology and method of administration').

Due to an increase in finerenone exposure, consider additional serum potassium monitoring and adapt monitoring according to patient characteristics with moderate hepatic impairment (Child Pugh B) (see section 'Posology and method of administration').

4.4.4 Concomitant use of substances that affect finerenone exposure

Moderate and weak CYP3A4 inhibitors

The concomitant use of Kerendia with moderate CYP3A4 inhibitors (e.g., erythromycin and verapamil) and weak CYP3A4 inhibitors (e.g., amiodarone and fluvoxamine) is expected to increase finerenone exposure (see section 'Drug Interactions') Monitor serum potassium especially during initiation of or changes to dosing of Kerendia or the CYP3A4 inhibitor (see section 'Posology and method of administration').

Strong and moderate CYP3A4 inducers

Avoid concomitant use of Kerendia with strong CYP3A4 inducers (e.g., rifampicin, carbamazepine, phenytoin, phenobarbital, St John's Wort) or moderate CYP3A4 inducers (e.g., efavirenz), which are expected to markedly decrease finerenone plasma concentrations and result in reduced therapeutic effect (see section 'Drug Interactions') Consider selection of an alternate concomitant medicinal product with no or weak potential to induce CYP3A4.

Grapefruit

Avoid concomitant intake of grapefruit or grapefruit juice as it is expected to increase the plasma concentration of finerenone (see section 'Posology and method of administration' and 'Drug Interactions').

4.4.5 Embryo-fetal toxicity

Animal data have shown reproductive toxicity. The relevance for humans is unknown. Kerendia should not be used during pregnancy unless there has been careful consideration of the benefit for the mother and the risk to the fetus. If the patient becomes pregnant while taking Kerendia, the patient should be informed of potential risks to the fetus. Advise women of childbearing potential to use effective contraception during treatment with Kerendia. Advise women not to breastfeed during treatment with Kerendia (see section 'Use in special populations').

4.5 Drugs Interactions

4.5.1 Effects of other substances on finerenone

Finerenone is cleared almost exclusively via cytochrome P450 (CYP)-mediated oxidative metabolism (mainly CYP3A4 [90%] with a small contribution of CYP2C8 [10%]).

4.5.1.1 Effect of CYP3A4 inhibitors on finerenone

Strong CYP3A4 inhibitors

Simulations suggest that concomitant use of Kerendia with itraconazole (200 mg BID), a strong CYP3A4 inhibitor, increases finerenone AUC (+531%) and C_{max} (+137%). Clarithromycin (500 mg BID), another strong inhibitor, also is predicted to increase finerenone AUC (+428%) and C_{max} (+125%). Due to an expected marked increase in finerenone exposure, concomitant use of Kerendia with itraconazole, clarithromycin and other strong CYP3A4 inhibitors (e.g., ketoconazole, ritonavir, neflavin, cobicistat, telithromycin or nefazodone) is contraindicated (see section 'Contraindications').

Moderate CYP3A4 inhibitors

Concomitant use of erythromycin (500 mg thrice daily), a moderate CYP3A4 inhibitor, increased finerenone mean AUC and C_{max} by 248% and 88%, respectively. Another moderate CYP3A4 inhibitor, verapamil (240 mg controlled-release tablet once daily), increased finerenone mean AUC and C_{max} by 170% and 120%, respectively. Serum potassium may increase, and therefore, monitoring of serum potassium is recommended (see section 'Posology and method of administration' and 'Special warnings and precautions for use').

Weak CYP3A4 inhibitors

In an analysis of Kerendia in patients, the use of amiodarone, a weak CYP3A4 inhibitor, was estimated to result in a 21% increase of finerenone AUC. Simulations suggest that fluvoxamine (100 mg BID), another weak inhibitor, increases finerenone AUC (+57%) and C_{max} (+38%). Serum potassium may increase, and therefore, monitoring of serum potassium is recommended (see section 'Posology and method of administration' and 'Special warnings and precautions for use').

Grapefruit

Concomitant intake of grapefruit or grapefruit juice is expected to increase the plasma concentration of finerenone and should be avoided (see section 'Posology and method of administration' and 'Special warnings and precautions for use').

4.5.1.2 Effect of strong and moderate CYP3A4 inducers on finerenone

Simulations suggest that rifampicin (600 mg OD), a strong CYP3A4 inducer, decreases finerenone AUC (-93%) and C_{max} (-86%). Efavirenz (600 mg OD), a moderate CYP3A4 inducer, is predicted to decrease finerenone AUC (-81%) and C_{max} (-68%).

Concomitant use of Kerendia with rifampicin and other strong CYP3A4 inducers (e.g., carbamazepine, phenytoin, phenobarbital, St John's Wort) or with efavirenz and other moderate CYP3A4 inducers, markedly decreases finerenone plasma concentration and results in reduced therapeutic effect and should be avoided (see section 'Special warnings and precautions for use').

4.5.1.3 Lack of clinically relevant drug-drug interaction

Concomitant use of gemfibrozil (600 mg twice-daily), a strong inhibitor of CYP2C8, increased finerenone mean AUC and C_{max} by 10% and 16%, respectively. This is not clinically relevant.

Pre- and co-treatment with the proton pump inhibitor omeprazole (40 mg once daily) had no effect on finerenone mean AUC and mean C_{max}.

Concomitant use of antacid aluminum hydroxide and magnesium hydroxide (70 mL) had no effect on finerenone mean AUC and reduced its mean C_{max} by 19%. This is not clinically relevant.

4.5.2 Effect of finerenone on other substances

In vivo a multiple-dose regimen of 20 mg finerenone once-daily had no effect on the AUC of the CYP3A4 probe substrate midazolam. Finerenone neither inhibits nor induces CYP3A4.

A single dose of 20 mg finerenone also had no effect on AUC and C_{max} of the CYP2C8 probe substrate repaglinide. Finerenone does not inhibit CYP2C8.

Lack of mutual pharmacokinetic interaction was demonstrated between finerenone and the CYP2C9 substrate warfarin and between finerenone and the P-gp substrate digoxin.

Multiple doses of 40 mg finerenone once -daily had no clinically relevant effect on AUC or Cmax of the BCRP and OATP substrate rosuvastatin.

4.5.3 Pharmacodynamic interactions

Medications that increase serum potassium

It is anticipated that medications that increase serum potassium will increase the risk of hyperkalemia when used concomitantly with Kerendia.

Concomitant use of Kerendia with the following medications should be avoided:

- potassium-sparing diuretics (e.g., amiloride, triamterene)
- other mineralocorticoid receptor antagonists (MRAs) (e.g., eplerenone, esaxerenone, spironolactone, canrenone)

Kerendia should be used with caution and serum potassium monitored when taken concomitantly with the following medications:

- potassium supplements
- trimethoprim, or trimethoprim - sulfamethoxazole. Temporary discontinuation of Kerendia may be necessary. (See section 'Special warnings and precautions for use')

4.6 Use in special populations

4.6.1 Pregnancy

There are no data on the use of Kerendia in pregnant women. Animal studies have shown embryo-fetal developmental toxicity at exposures in excess to the maximum human exposure. In the pre- and post-natal developmental toxicity study, slightly increased locomotor activity was found in the offspring, which may have been caused by exposure during pregnancy.

Kerendia should not be used during pregnancy unless there has been careful consideration of the benefit for the mother and the risk to the fetus (see section 'Special warnings and precautions for use').

4.6.2 Lactation

It is unknown whether finerenone or its metabolites are excreted in human breast milk. Available pharmacokinetic and toxicological data in animals have shown excretion of finerenone and its metabolites in milk. Rat pups exposed by this route showed adverse effects. A risk to the nursing infant cannot be excluded. Breastfeeding should be discontinued if use of Kerendia is considered essential (see section 'Special warnings and precautions for use').

4.6.3 Fertility

No human data on the effect of Kerendia on fertility is available. Animal studies with finerenone did not indicate a risk of impaired male fertility. Animal studies with finerenone indicated impaired female fertility at exposures considered sufficiently in excess to the maximum human exposure indicating no clinical relevance.

4.6.4 Women of childbearing potential / Contraception

Kerendia may cause embryo-fetal harm when administered during pregnancy. Women of childbearing potential should use effective contraception during treatment with Kerendia (see section 'Special warnings and precautions for use').

4.7 Effects on ability to drive or use machines

No effects on ability to drive and use machines have been observed.

4.8 Undesirable effects

4.8.1 Summary of the safety profile

The safety of Kerendia in patients with chronic kidney disease and type 2 diabetes was evaluated in two pivotal phase III studies FIDELIO-DKD and FIGARO-DKD. In the FIDELIO-DKD study, 2,827 patients received Kerendia (10 or 20 mg once daily) with a mean duration of treatment of 2.2 years. In the FIGARO-DKD study, 3683 patients received Kerendia (10 or 20 mg once daily) with a mean duration of treatment of 2.9 years. The most frequently reported (\geq 10%) adverse reaction was hyperkalemia. See 'Description of selected adverse reactions' below (see section 'Special warnings and precautions for use').

4.8.2 Tabulated list of adverse reactions

The adverse reactions reported with Kerendia are summarized in Table 2 below by MedDRA system organ class and by frequency.

Adverse reactions are ranked by System organ class and then by frequency with the most frequent first, using the following convention:

very common (\geq 1/10)
common (\geq 1/100 to $<$ 1/10)
uncommon (\geq 1/1,000 to $<$ 1/100)
rare (\geq 1/10,000 to $<$ 1/1,000)
very rare ($<$ 1/10,000)

Within each frequency grouping, adverse reactions are ranked in order of decreasing seriousness.

Table 2: Adverse reactions reported with Kerendia in phase III studies (pooled FIDELIO-DKD and FIGARO-DKD)

MedDRA System Organ Class	Very common	Common
Metabolism and nutrition disorders	Hyperkalemia ¹	Hyponatremia ² Hyperuricemia ^{3,4}
Vascular disorders		Hypertension ^{5,6}
Investigations		Glomerular filtration rate decreased ⁷

- ¹ includes Blood potassium increased and Hyperkalemia
- ² includes Blood sodium decreased and Hyponatremia
- ³ includes Blood uric acid increased and Hyperuricemia
- ⁴ Asymptomatic hyperuricemia was observed. In the FIGARO-DKD study, an increase from baseline in mean serum uric acid of up to 0.3 mg/dL was seen in the Kerendia group compared to placebo, which attenuated over time. No hyperuricemia related treatment discontinuations were reported.
- ⁵ includes Blood pressure decreased, Blood pressure diastolic decreased, Diastolic hypotension and Hypotension
- ⁶ In patients treated with Kerendia, the mean systolic blood pressure (SBP) decreased by 3 mmHg and the mean diastolic blood pressure (DBP) decreased by 1.2 mmHg at month 1, remaining stable thereafter. The majority of hypotension events were mild or moderate and resolved. Events associated with hypotension, e.g., dizziness, syncope, or fall, were not more frequent in patients using Kerendia in comparison to placebo.
- ⁷ An initial decrease in eGFR (mean 2 mL/min/1.73m²) attenuated over time compared to placebo. This decrease has been shown to be reversible after treatment discontinuation.

4.8.3 Description of selected adverse reactions

Hyperkalemia

In the FIDELIO-DKD study including patients with CKD (mean eGFR 44.3 mL/min/1.73 m²) and T2D, hyperkalemia events were reported in 18.3% of Kerendia-treated patients compared with 9.0% of placebo-treated patients. An increase from baseline in mean serum potassium in the first month of treatment of approximately 0.2mmol/L was observed in the Kerendia group compared which remained stable thereafter.

In the FIGARO-DKD study including patients with CKD (mean eGFR 67.8 mL/min/1.73 m²) and T2D, hyperkalemia events were reported in 10.8% of Kerendia-treated patients compared with 5.3% of placebo-treated patients. An increase from baseline in mean serum potassium in the first month of treatment of approximately 0.15 mmol/L was observed in the Kerendia group compared to placebo, which remained stable thereafter. In both studies the majority of hyperkalemia events were mild to moderate in patients treated with Kerendia. For specific recommendations, refer to sections 'Posology and method of administration' and 'Special warnings and precautions for use'.

4.9 Overdose

No cases of adverse events associated with finerenone overdose in humans have been reported. The most likely manifestation of overdose is anticipated to be hyperkalemia. If hyperkalemia develops, standard treatment should be initiated.

Finerenone is unlikely to be efficiently removed by hemodialysis given its fraction bound to plasma proteins of about 90%.

5. PHARMACOLOGICAL PROPERTIES

Pharmacodynamic properties

Pharmacotherapeutic group: aldosterone antagonists

ATC Code: C03DA05

5.1 Mechanism of Action

Finerenone is a nonsteroidal, selective antagonist of the mineralocorticoid receptor (MR) that potently attenuates inflammation and fibrosis mediated by MR overactivation. The MR is expressed in the kidneys, heart and blood vessels where finerenone also counteracts sodium retention and hypertrophic processes. Finerenone has a high potency and selectivity for the MR due to its nonsteroidal structure and bulky binding mode. Finerenone has no relevant affinity for androgen, progesterone, estrogen and glucocorticoid receptors and therefore does not cause sex hormone-related adverse events (e.g., gynecomastia). Its binding to the MR leads to a specific receptor ligand complex that blocks recruitment of transcriptional coactivators implicated in the expression of pro-inflammatory and pro-fibrotic mediators.

5.2 Pharmacodynamic effects

5.2.1 Effects in healthy participants

Multiple dose regimens of finerenone (daily doses of 20 mg or 40 mg over 10 days) led to activation of the renin-angiotensin-aldosterone system (RAAS), i.e., reversible increases of plasma renin activity and serum aldosterone concentrations with baseline values reached again within 48 hours after the last dose.

Following activation of the MR with the agonist fludrocortisone single doses of finerenone up to 20 mg showed dose dependent natriuretic effects while decreasing urinary potassium excretion as compared to placebo.

Single or multiple doses of finerenone did not influence vital signs parameters in healthy participants.

5.2.2 Effects in patients with CKD and T2D

In FIDELIO-DKD and FIGARO-DKD, randomized, double-blind, placebo-controlled, multicenter phase III studies in adults with CKD and T2D, the placebo-corrected relative reduction in urinary albumin-to-creatinine ratio (UACR) in patients randomized to finerenone at Month 4 was 31% and 32%, respectively and UACR remained reduced throughout both studies.

In ARTS DN, a randomized, double-blind, placebo-controlled, multicenter phase IIb dose-finding study in patients with CKD and T2D, the placebo-corrected relative reduction in UACR

Figure 2: Time to first occurrence of CV death, non-fatal myocardial infarction, non-fatal stroke or hospitalization for heart failure in the FIDELIO-DKD study

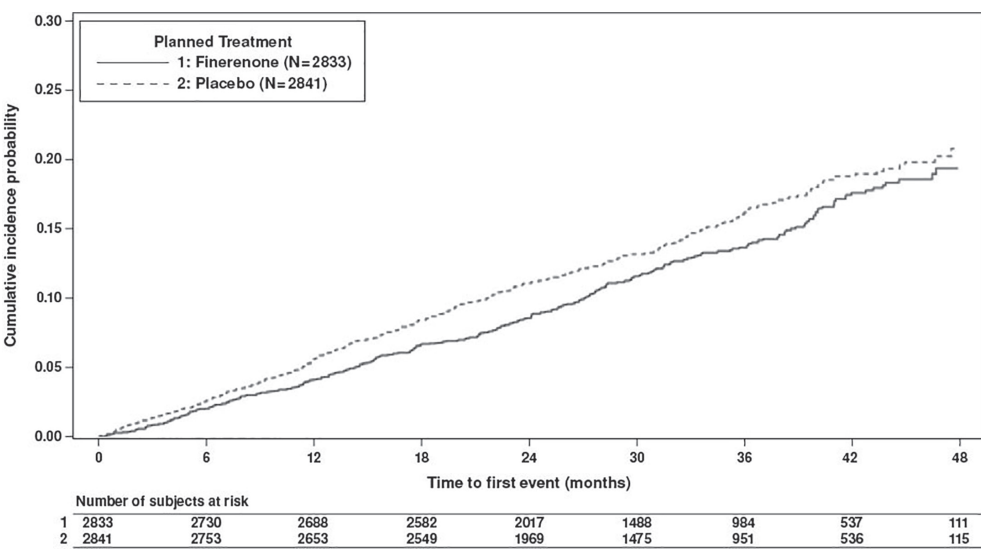


Table 4. Analysis of the Primary and Secondary Time-to-Event Endpoints (and their Individual Components) in Phase III Study FIGARO-DKD

	Subjects with Chronic Kidney Disease and Type 2 Diabetes					
	Kerendia* 10 or 20 mg OD, N=3686		Placebo*, N=3666		Treatment Effect Kerendia / Placebo	
Primary and Secondary Time-to-event Endpoints:	n (%)	Event Rate (100 pt–yr)	n (%)	Event Rate (100 pt–yr)	Hazard Ratio (95% CI)	p-value
Primary composite of CV death, non-fatal MI, non-fatal stroke or hospitalization for heart failure	458 (12.4%)	3.87	519 (14.2%)	4.45	0.87 [0.76; 0.98]	0.0264
CV death	194 (5.3%)	1.56	214 (5.8%)	1.74	0.90 [0.74; 1.09]	-
Non-fatal MI	103 (2.8%)	0.85	102 (2.8%)	0.85	0.99 [0.76; 1.31]	-
Non-fatal stroke	108 (2.9%)	0.89	111 (3.0%)	0.92	0.97 [0.74; 1.26]	-
Hospitalization for heart failure	117 (3.2%)	0.96	163 (4.4%)	1.36	0.71 [0.56; 0.90]	-
Composite of kidney failure, sustained eGFR decline ≥40% or renal death	350 (9.5%)	3.15	395 (10.8%)	3.58	0.87 [0.76; 1.01]	0.0689**
Kidney failure	46 (1.2%)	0.40	62 (1.7%)	0.54	0.72 [0.49; 1.05]	-
Sustained eGFR decline ≥ 40%	338 (9.2%)	3.04	385 (10.5%)	3.49	0.87 [0.75; >1.00]	-
Renal death	0	-	2 (<0.1%)	-	-	-
All-cause hospitalization	1573 (42.7%)	16.91	1605 (43.8%)	17.52	0.97 [0.90; 1.04]	-
All-cause mortality	333 (9.0%)	2.68	370 (10.1%)	3.01	0.89 [0.77; 1.04]	-
Composite of kidney failure, sustained eGFR decline ≥ 57% or renal death	108 (2.9%)	0.95	139 (3.8%)	1.23	0.77 [0.60; 0.99]	-

* Treatment in addition to maximum tolerated labeled doses of ACEi or ARB.

** Not significant

Figure 3: Time to first occurrence of CV death, non-fatal myocardial infarction, non-fatal stroke or hospitalization for heart failure in the FIGARO-DKD study

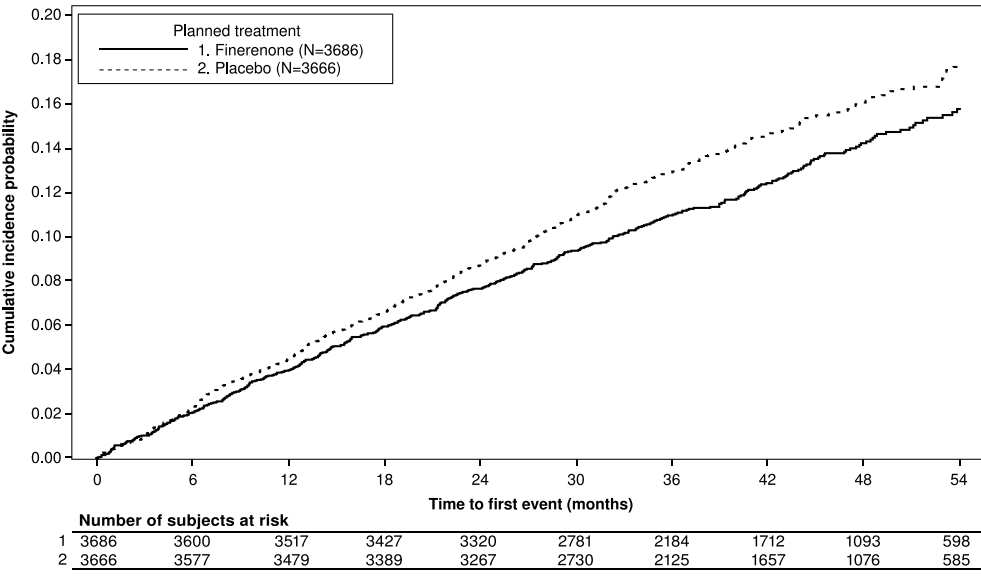
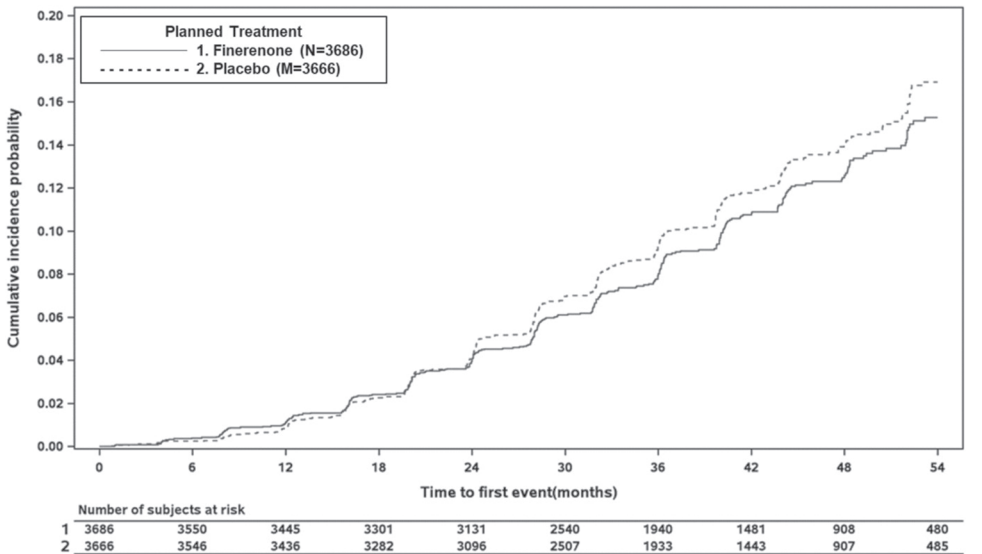
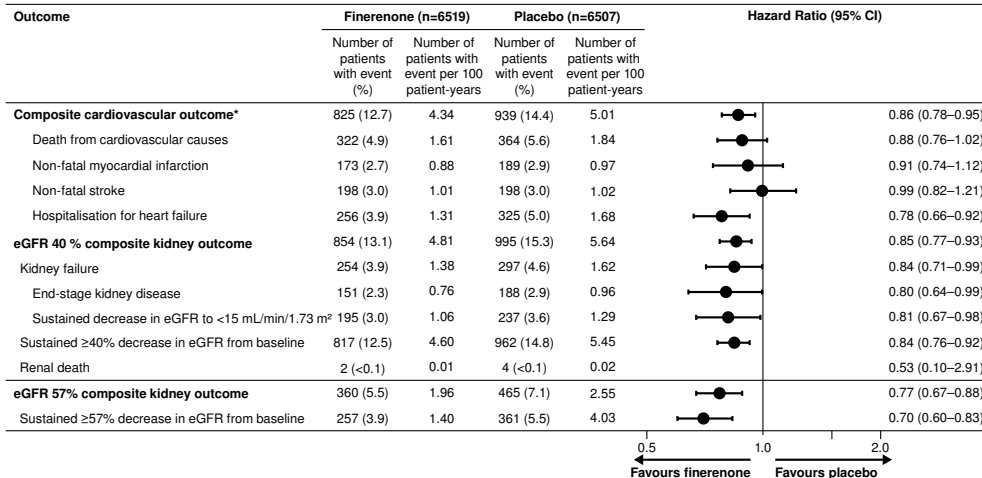


Figure 4: Time to first occurrence of kidney failure, sustained decline in eGFR ≥40% from baseline, or renal death in the FIGARO-DKD study



In a pre-specified pooled analysis of the FIDELIO-DKD and FIGARO-DKD studies, finerenone reduced the risk of the CV composite endpoint of time to CV death, non-fatal MI, non-fatal stroke or hospitalization for heart failure compared to placebo (HR 0.86 [95% CI 0.78; 0.95]). See Figure 5. The risk of the kidney composite endpoint of time to kidney failure, a sustained decrease in eGFR of 40% or more compared to baseline or renal death was also reduced with finerenone compared to placebo (HR 0.85 [95% CI 0.77; 0.93]), as was the composite endpoint of time to kidney failure, a sustained decrease in eGFR of 57% or more compared to baseline or renal death (HR 0.77 [95% CI 0.67; 0.88]). See Figure 5.

Figure 5: Cardiovascular and kidney composite outcomes in the pooled analysis of FIDELIO-DKD and FIGARO-DKD



5.3 Pharmacokinetic properties

5.3.1 Pharmacokinetic / Pharmacodynamic relationships

The concentration-effect relationship over time for UACR was characterized by a maximum effect model indicating saturation at high exposures. The model-predicted time to reach the full (99%) steady-state drug effect on UACR was 138 days. The pharmacokinetic (PK) half-life was 2-3 hours and PK steady state was achieved after 2 days, indicating timescale separation.

5.3.2 Absorption

Finerenone is almost completely absorbed after oral administration. Absorption is rapid with maximum plasma concentrations (C_{max}) appearing between 0.5 and 1.25 hours after tablet intake in the fasted state. The absolute bioavailability of finerenone is 43.5% due to first-pass metabolism in the gut-wall and liver. Finerenone is not a substrate of the efflux transporter P-gp in vivo. Intake with high fat, high calorie food increased finerenone AUC by 21%, reduced C_{max} by 19% and prolonged the time to reach C_{max} to 2.5 hours. This is not clinically relevant. Therefore, finerenone can be taken with or without food (see section 'Posology and method of administration').

5.3.3 Distribution

The volume of distribution at steady state (V_{ss}) of finerenone is 52.6 L. The human plasma protein binding of finerenone *in vitro* is 91.7%, with serum albumin being the main binding protein.

5.3.4 Metabolism / Biotransformation

Approximately 90% of finerenone metabolism is mediated by CYP3A4 and 10% by CYP2C8. Four major metabolites were found in plasma, resulting from oxidation of the dihydropyridine moiety to a pyridine (M1a, M1b), subsequent hydroxylation of a methyl group (M2a) and formation of a carboxyl function (M3a). All metabolites are pharmacologically inactive.

5.3.5 Elimination / Excretion

The elimination of finerenone from plasma is rapid with an elimination half-life (t1/2) of about 2 to 3 hours. Excretion of unchanged finerenone represents a minor route (<1% of dose in the urine due to glomerular filtration, < 0.2% in the feces). About 80% of the administered dose was excreted via urine and approximately 20% of the dose was excreted via feces, almost exclusively in the form of metabolites. With a systemic blood clearance of about 25 L/h, finerenone can be classified as a low clearance drug.

5.3.6 Linearity / Non-linearity

Finerenone pharmacokinetics are linear across the investigated dose range from 1.25 to 80 mg.

5.3.7 Additional information on special populations

5.3.7.1 Patients with renal impairment

Mild renal impairment (CLCR 60 - < 90 mL/min) did not affect finerenone AUC and C_{max} . Compared to subjects with normal renal function (CLCR ≥ 90 mL/min), the effect of moderate (CLCR 30 - < 60 mL/min) or severe (CLCR < 30 mL/min) renal impairment on AUC of finerenone was similar with increases by 34-36%. Moderate or severe renal impairment had no effect on C_{max} (see section 'Posology and method of administration').

Due to the high plasma protein binding, finerenone is not expected to be dialyzable.

5.3.7.2 Patients with hepatic impairment

There was no change in finerenone exposure in cirrhotic subjects with mild hepatic impairment (Child Pugh A) (see section 'Posology and method of administration').

In cirrhotic subjects with moderate hepatic impairment (Child Pugh B), finerenone mean AUC was increased by 38% and C_{max} was unchanged compared to healthy control subjects (see section 'Posology and method of administration').

There are no data in patients with severe hepatic impairment (Child Pugh C) (see section 'Posology and method of administration').

5.3.7.3 Geriatric patients

Of the 2827 patients who received Kerendia in the FIDELIO-DKD study, 58% of patients were 65 years and older, and 15% were 75 years and older. No overall differences in safety or efficacy were observed between these patients and younger patients.

Of the 3683 patients who received Kerendia in the FIGARO-DKD study, 52% of patients were 65 years and older, and 13% were 75 years and older. No overall differences in safety or efficacy were observed between these patients and younger patients.

Elderly subjects (≥ 65 years of age) exhibited higher finerenone plasma concentrations than younger subjects (≤ 45 years of age), with mean AUC and C_{max} values being 34% and 51% higher in the elderly (see section 'Posology and method of administration').

Population-pharmacokinetic analyses did not identify age as a covariate for finerenone AUC or C_{max} .

5.3.7.4 Gender

Gender had no effect on the pharmacokinetics of finerenone (see section 'Posology and method of administration').

5.3.7.5 Body Weight

Population-pharmacokinetic analyses identified body weight as a covariate for finerenone C_{max} . The C_{max} of a subject with a body weight of 50 kg was estimated to be 38% to 51% higher compared to a subject of 100 kg. Dose adaptation based on body weight is not warranted (see section 'Posology and method of administration').

5.3.7.6 Ethnic differences

Population-pharmacokinetic analyses in patients demonstrated no clinically relevant difference in finerenone exposure between Asian and Caucasian patients (see section 'Posology and method of administration').

5.3.7.7 Smoking status

Finerenone is not metabolized by an enzyme that is inducible by tobacco smoke (see section 'Posology and method of administration').

6. NON CLINICAL PARTICULARS

Non-clinical data reveal no special hazard for humans based on conventional studies of safety pharmacology, single dose toxicity, genotoxicity, phototoxicity, carcinogenicity and male and female fertility. Effects observed in repeat-dose toxicity studies were mainly due to exaggerated pharmacodynamic activities of finerenone and secondary adaptive responses. In studies on embryo-fetal development, effects in rats were observed at exposures considered sufficiently in excess to the maximum human exposure thereby not indicating an increased concern for fetal harm. In the pre- and post-natal developmental study, adverse effects in pups exposed via milk were found. In addition, increased locomotor activity in the offspring was observed, which may result from exposure during pregnancy.

6.1 Animal Toxicology or Pharmacology

6.1.1 Systemic toxicity

In the animal toxicity studies, finerenone caused impaired water-electrolyte balance with a secondary response in adrenals, as expected for the mode-of-action. In the shorter-term studies in rats, additional secondary changes were found in kidneys and urinary bladder that were not reproduced in the chronic study. In addition, atrophic changes in the female genital tract of rats were found in the short-term studies at exposures representing an $AUC_{unbound}$ of 19 times that in humans at a dose of 20 mg indicating little clinical relevance.

In dogs, a reduced prostate weight and size was found at an $AUC_{unbound}$ of about 10 to 60 times that in humans indicating little clinical relevance.

6.1.2 Embryotoxicity / Teratogenicity

In the embryo-fetal toxicity in rats, finerenone resulted in reduced placental weights and signs of fetal toxicity including reduced fetal weights and retarded ossification at the maternal toxic dose of 10 mg/kg/day corresponding to an $AUC_{unbound}$ of 19 times that in humans. At 30 mg/kg/day, the incidence of visceral and skeletal variations was increased (slight edema, shortened umbilical cord, slightly enlarged fontanelle) and one fetus showed complex malformations including a rare malformation (double aortic arch) at an $AUC_{unbound}$ of about 25 times that in humans. The doses free of any findings (low dose in rats, high dose in rabbits) provided safety margins of 10 to 13 times for $AUC_{unbound}$. Therefore, the findings in rats do not indicate an increased concern for fetal harm (see section 'Use in special populations').

When rats were exposed during pregnancy and lactation in the pre- and postnatal developmental toxicity study, increased pup mortality and other adverse effects (lower pup weight, delayed pinna unfolding) were observed at about 4 times the $AUC_{unbound}$ expected in humans. In addition, the offspring showed slightly increased locomotor activity, but no other neurobehavioral changes starting at about 4 times the $AUC_{unbound}$ expected in humans. The dose free of findings provided a safety margin of about 2 for $AUC_{unbound}$. The increased locomotor activity in offspring may indicate a potential risk for the fetus. In addition, because of the findings in pups, a risk for the nursing infant cannot be excluded (see section 'Special warnings and precautions for use' and 'see section 'Use in special populations').

6.1.3 Reproduction toxicity

Male fertility was not affected by Kerendia (see section 'Use in special populations'). Finerenone caused reduced female fertility (decreased number of corpora lutea and implantation sites) as well as signs of early embryonic toxicity (increased post-implantational loss and decreased number of viable fetuses) at about 21 times the human $AUC_{unbound}$. In addition, reduced ovarian weights were found at about 17 times the human $AUC_{unbound}$. No effects on female fertility and early embryonic development were found at 10 times the human $AUC_{unbound}$. Therefore, the findings in female rats are of little clinical relevance (see section 'Use in special populations').

6.1.4 Genotoxicity and carcinogenicity

Finerenone was non-genotoxic.

In 2-year carcinogenicity studies, finerenone did not show a carcinogenic potential in male and female rats as well as female mice. In male mice, finerenone resulted in an increase in Leydig cell adenoma at doses representing 26 times the $AUC_{unbound}$ in humans. A dose representing 17 times the $AUC_{unbound}$ in humans did not cause any tumors. Based on the known sensitivity of rodents to develop these tumors and the pharmacology-based mechanism at supratherapeutic doses as well as adequate safety margins, the increase in Leydig cell tumors in male mice is not clinically relevant.

6.1.5 Safety pharmacology

In the safety pharmacology studies assessing nervous, respiratory and cardiovascular function, the only finding was a slight shortening of the PQ interval in dogs at free plasma concentrations of about 6 times the human therapeutic concentration. Therefore, no clinical relevance is expected.

6.1.6 Repeated dose toxicity

In the rat 26-week study, finerenone caused slight changes in electrolytes as well as slight to moderate changes in the adrenals. These findings are related to the mode of action. Adverse effects were seen at an $AUC_{unbound}$ of about 17 times that in humans (reduced body weight). The dose free of any adverse findings provided a safety margin of at least 6.

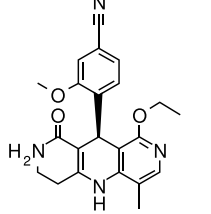
In the 4- and 13-week studies, rats showed mild degenerative changes in the kidney as well as mild changes in the urinary bladder, which were not reproduced in the chronic study. The high dose with signs of general toxicity also caused atrophic changes in female genital organs. The $AUC_{unbound}$ in females at the high dose was about 21 times the human exposure. Therefore, these effects are of little clinical relevance.

In the chronic study in dogs, finerenone caused mild changes in the adrenal glands, which are regarded as mode-of-action-related. In addition, a decrease in prostate weights and size was found starting at an $AUC_{unbound}$ of 10 times the maximum human therapeutic exposure. As there were not additional findings in the male genital tract at the high dose representing 60 times the maximum human exposure, this effect is of little clinical relevance.

7. DESCRIPTION:

Chemistry

Chemical name: (4S)-4-(4-(cyano-2-methoxyphenyl)-5-ethoxy-2,8-dimethyl-1,4-dihydro-1,6-naphthyridine-3-carboxamide
Empirical formula: C₂₁H₂₂N₄O₃
Molecular weight: 378.43 g/mol
The chemical structure is:



Finerenone is the active ingredient in Kerendia. Finerenone micronized drug substance is a white to yellow, crystalline powder. It is practically insoluble in water and sparingly soluble in 0.1 M HCl, ethanol, and acetone.

8. PHARMACEUTICAL PARTICULARS

List of excipients

Kerendia tablets contain the inactive ingredients:

KERENDIA Film-coated Tablet 10mg and 20mg
Cellulose microcrystalline
Croscarmellose sodium
Hypromellose 5cP
Lactose monohydrate
Magnesium stearate
Sodium laurilsulfate
The film coating contains:
KERENDIA Film-coated Tablet 10mg and 20mg
Lacquer light pink(Kerendia 10 mg film-coated tablet)
Ferric oxide red (Kerendia 10 mg film-coated tablet)
Lacquer light yellow (Kerendia 20 mg film-coated tablet)
Ferric oxide yellow (Kerendia 20 mg film-coated tablet)
Hypromellose 5 cP
Talc
Titanium dioxide

8.1 Incompatibilities

Not applicable

8.2 Shelf life

Please refer outer carton for expiry date

8.3 Packaging Information

KERENDIA film coated tablets available in, PP/Al-blisters and PVC/PVDC/Al-blisters

8.4 Storage and handling Information

Store below 30 °C.

Instructions for use / handling

Keep out of reach of Children

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

9. PATIENT COUNSELLING INFORMATION

Dosing Instruction:

You can take Kerendia with or without food. Do not eat grapefruit or drink grapefruit juice as long as you take Kerendia. If you do, you may get too much finerenone in your blood. You may have more side effects. Check with your doctor before taking Kerendia with a salt substitute. Some salt substitutes contain potassium. If you use it while taking Kerendia, you may get too much potassium in your blood (hyperkalemia). This may be unsafe for you.

Pregnancy, breastfeeding, fertility:

Tell your doctor if you are pregnant, think you may be pregnant or plan on becoming pregnant.

Kerendia should not be taken during pregnancy unless clearly necessary. Your doctor will discuss with you the risk to your unborn baby if you take Kerendia during pregnancy.

If you are female and able to give birth, you should use reliable birth control. Your doctor will explain to you what type of birth control you can use.

Tell your doctor if you are breastfeeding or planning to breastfeed. You should not breastfeed while taking Kerendia. Kerendia may cause harm to your nursing baby.

Kerendia is not expected to lower the ability to have children (fertility) in men or women.

10. DETAILS OF MANUFACTURER

Manufactured by:

Bayer AG,
51368, Leverkusen, Germany

Imported and Marketed by:

Bayer Pharmaceuticals Private Limited.
Shree Arihant Comp, Bldg-D-9, Gala-1 to 6,
Reti Bunder Road, Kalher Village,
Dist. Thane, Taluka Bhiwandi-9,
(Thane-Zone 3), Pin: 421302,
Maharashtra, India



11. DETAILS OF PERMISSION OR LICENSE NUMBER WITH DATE

IMP-ND-48/2022 dated 11 Apr 2022

12. DATE OF REVISION

Version number: KE_2024_01 dated Jul 2024

Based on CCDS v 02.0 dated 29-Oct-2021, CCDS v 03 dated 15 Dec 2021and US indication statement

approved dated 09-Jul-2021

Revision: Jul 2024

Bayer