



Diamicron MR®

– Factsheet –

What is Diamicron MR?

- Diamicron MR is a globally well known oral antidiabetic agent containing a modified-release version of the active ingredient gliclazide.
- Diamicron MR belongs to a class of oral hypoglycaemic agents known as the sulfonylureas, and is used to help control blood glucose levels in patients with type 2 diabetes.

How does it work?

- Diamicron MR is the first oral antidiabetic agent to employ an innovative formulation based on a hydrophilic matrix. This matrix releases Diamicron's short-acting active sulfonylurea ingredient (gliclazide) over a 24-hour period with only one intake at breakfast, between 1 and 4 tablets (30mg to 120mg). Because the release profile of the active glucose-lowering drug is perfectly matched to the normal rise and fall in blood glucose levels which occur in type 2 diabetes patients over the course of a day, Diamicron MR is able to achieve an effective 24-hour glycaemic control with a remarkable safety profile.^{1,2,3,6}
- The unique formulation of Diamicron MR also allows for once-daily dosing of the drug. This is an important factor in encouraging patients to be compliant with long-term treatment and thus ensuring that tight glycaemic control is maintained.
- Once released, the gliclazide active ingredient reduces blood glucose levels by stimulating insulin secretion from the β -cells in the pancreas.⁴ It does this by selectively stimulating specialised receptors on the pancreas's insulin-producing cells, evoking an effective secretagogue effect which is synergistic with glucose's stimulation of insulin secretion.⁵
- In type 2 diabetics, gliclazide restores the first peak of insulin secretion in response to glucose and increases the second phase of insulin secretion.⁴ A significant increase in insulin response is also seen in response to stimulation induced by a meal or glucose.⁴

What is the evidence for Diamicon MR in type 2 diabetes?

Diamicon MR's effectiveness as a treatment for type 2 diabetes is supported by a vast body of evidence from clinical trials carried out over both the long and short term.

Daily efficacy

- The release of active ingredient from Diamicon MR has been shown to match the natural changes in blood glucose levels which occur in type 2 diabetics over the course of a day.^{1,2} This means that Diamicon MR is able to provide good glycaemic control around the clock.³

Short-term efficacy

- In the GUIDE (GLUcose control in type 2 diabetes: Diamicon MR versus glimepiride) trial, Diamicon MR was shown to achieve tight glycaemic control from as early as 9 weeks of treatment.⁶
- When compared to another sulfonylurea, glibenclamide, Diamicon MR also demonstrated superior efficacy in controlling blood glucose. After 16 weeks of treatment, patients on Diamicon MR had a significantly lower HbA1c compared to those on glibenclamide.⁷
- Used as monotherapy in newly diagnosed type 2 diabetic patients, Diamicon MR also demonstrated powerful glycaemic control.⁶ Patients' HbA1c levels were reduced by 1.3% after 6 months of Diamicon therapy.⁶

Long-term efficacy

- In a large, randomized, double-blind, international study of over 500 patients Diamicon MR proved effective over a 2-year treatment period.⁸ Patients receiving Diamicon MR experienced significant reductions in their HbA1c levels after both 1 and 2 years of treatment.⁸
- Another long-term trial looked at secondary failure rates* among type 2 diabetics treated with either Diamicon MR, glibenclamide or glipizide over a 5-year period.⁹ Significantly greater therapeutic success was achieved with Diamicon MR where only 7% of patients failed, compared to secondary failure rates of over 17% on glibenclamide and more than 25% on glipizide.⁹ Based on the results of this study, it was concluded that Diamicon MR may be a better choice than other sulfonylureas for long-term therapy.⁹
- Results of a retrospective study have also shown that Diamicon MR is able to provide sustained efficacy without insulin for up to 14.5 years.¹⁰ Compared to patients treated with glibenclamide, the period until start of insulin treatment was significantly longer in the Diamicon group, with Diamicon MR buying an extra 6.5 years before the need to initiate insulin.¹⁰

Efficacy in combination

- For many diabetic patients, combination therapy will be a necessary step to keep glucose levels under control. In clinical trials, Diamicon has been shown to be effective in combination with both metformin and insulin.^{6,11}
- As Diamicon MR is also able to restore endogenous insulin secretion, patients taking Diamicon MR and insulin in combination may have up to 40% less insulin requirements, with no sacrifice in glycaemic control.¹²

Cardiovascular protection

- Diamicon MR can reduce the progression of atherosclerosis in type 2 diabetics, slowing the rate at which major arteries 'fur up'.¹³ Diamicon MR also acts to slow the rate of oxidation of LDL cholesterol, which is an important step on the pathway to atherosclerosis development.¹⁴
- Diamicon MR acts to decrease the mass of the left ventricle – one of the vital pumping chambers of the heart – suggesting a direct improvement in cardiovascular morbidity.¹⁵
- Patients treated with Diamicon MR show an increased survival of ~2-fold compared to those given older sulfonylureas.¹⁵
- Newer sulfonylureas such as Diamicon MR have been proven to significantly reduce the risk of heart attack (myocardial infarction) in type 2 diabetics.¹⁶

Direct beta cell protection

- Diamicon MR, unlike older sulfonylureas, is able to reduce the death of essential insulin-producing cells in the pancreas.^{17,18} This protective effect allows these vital beta cells to function better and survive longer.^{17,18}

Is Diamicon MR safe?

- Diamicon MR has a favourable efficacy-safety ratio as proven by a large pool of clinical data from randomized, double-blind trials.^{19,20}
- One particular safety benefit of Diamicon MR is its low risk of hypoglycaemia (low blood glucose levels).⁶ Once it has exerted its therapeutic effect, gliclazide detaches itself easily from the beta cell receptors in the pancreas.²¹ This reduces the risk of Diamicon MR producing an ongoing and unnecessary glucose lowering effect, which can lead to the problem of hypoglycaemia.

- Treatment with Diamicon MR is associated with 50% fewer hypoglycaemic episodes compared to glimepiride and some studies have also shown that Diamicon MR has a significantly lower incidence of hypoglycaemia than glibenclamide, even in elderly patients who are at higher risk of hypoglycaemia.^{6,20,22,23}
- Because of this favourable glycaemic safety profile, Diamicon MR is suitable for use in both elderly and renally impaired diabetic patients.
- Diamicon MR is also weight neutral, with studies showing no increase in BMI during up to 5 years of treatment.^{8,19}

Why was Diamicon MR chosen for ADVANCE?

- In testament to its important position in the arena of diabetes management, Diamicon MR was chosen as the glucose-lowering agent of choice in the intensive treatment arm of the largest prospective study ever carried out in type II diabetes: ADVANCE (Action in Diabetes and Vascular disease – PreterAx and Diamicon MR Controlled Evaluation). This important study was set up to evaluate the effects of strict blood glucose and blood pressure control on micro- and macrovascular outcomes in type 2 diabetic patients with high levels of cardiovascular risk.
- Diamicon MR was chosen for the ADVANCE study for a number of key reasons:
 1. It is proven to provide tight and additive glycaemic control.⁶
 2. It is remarkably safe even at higher doses – up to four tablets at breakfast.⁶
 3. Its innovative modified-release formulation ensures effective 24-hour glucose control with a single dose.³
 4. Its cardiovascular protection thanks to unique antioxidant properties.¹³⁻¹⁷
- These important advantages arise as a result of Diamicon MR's unique antioxidant properties, which act independently of its effect on blood glucose levels.²⁴ By scavenging harmful free radicals and so reducing the oxidative stress which is a key part of diabetes, Diamicon is able to both improve beta cell survival and offer direct cardiovascular protection.

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