

# COST COMPARISON OF DIAMICRON MR AND GENERIC GLICLAZIDE IN PREVENTING RENAL FAILURE IN TYPE 2 DIABETES MELLITUS IN THE PUBLIC SECTOR OF MALAYSIA



**MONASH**  
University  
MALAYSIA

Choon WY, Subramaniam T, Lee KKC  
School of Pharmacy, Monash University Malaysia, Selangor, Malaysia

## Background

Among the long-term complications arising from poor control of type 2 diabetes mellitus (T2DM), renal failure is the most expensive due to the enormous resources required for management. Evidence has shown that intensive glucose-lowering regimens may offer better protection against the development of end stage renal disease (ESRD). Gliclazide has been available as a once-daily modified release formulation (Diamicon MR) for enhancing patient's compliance leading to better control. However, generic gliclazide immediate release (IR) is still the first line therapy for new T2DM patients in Malaysia.

## Objective

This study compares the economic impact of Diamicon MR and generic gliclazide IR in preventing diabetic ESRD in Malaysia.

## Methodology

The model originally developed for Action in Diabetes and Vascular Disease: Preterax and Diamicon MR Controlled Evaluation (ADVANCE) trial was used to compare the cost and cost-effectiveness of Diamicon MR and generic gliclazide IR in preventing ESRD. (1) Efficacy, prevalence and adverse effect data were from published overseas literature. Cost data was obtained from local literature and government website. All cost data was adjusted to 2018 using the Purchasing Power Parity (PPP) index. The study was performed from the Malaysia government's perspective.

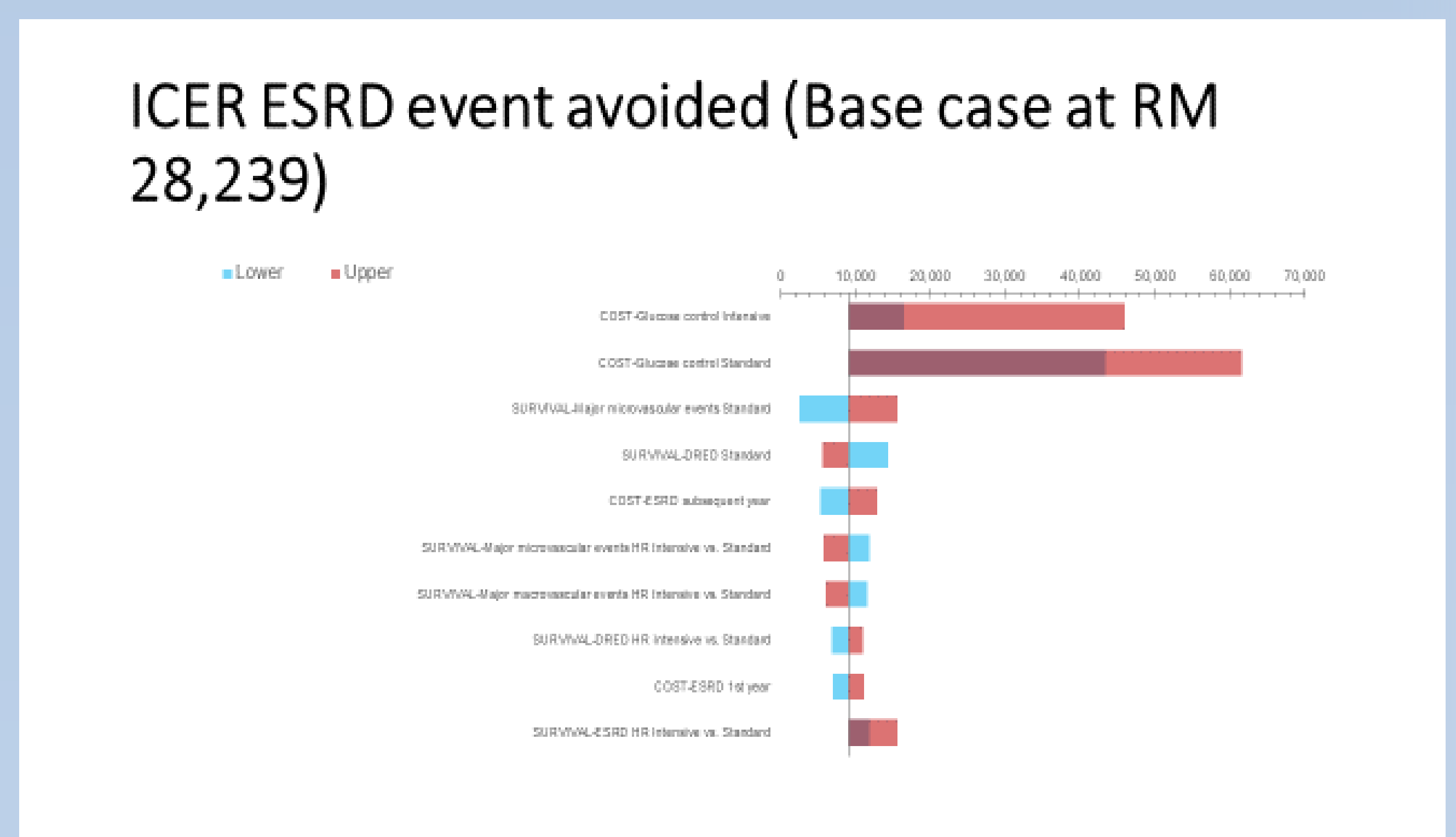
## Results

Based on the ADVANCE model, the cost of prevention per episode of ESRD is substantially reduced by 61.8% for Diamicon MR as compared to generic gliclazide IR ((RM628 (USD150) vs RM240(USD57)). (Table 1) Deterministic sensitivity analysis shows cost of Diamircon MR and generic IR are both sensitive parameters. (Fig 1)

Table 1

Figure 1

|                         |                 |                  | INCREMENTAL |        |
|-------------------------|-----------------|------------------|-------------|--------|
|                         | Generic IR (RM) | Diamicon MR (RM) | Δ           | %      |
| LYs                     | 4,768           | 4,777            | 0.017       | +0.1%  |
| QALYs                   | 3,555           | 3,570            | 0.016       | +0.1%  |
| ESRD event (/1,000 pts) | 10              | 4                | -7          | -65.0% |
| Costs                   | 3,051           | 2,867            | -184        | -6.0%  |
| Treatment               | 2,855           | 2,199            | 144         | +7.0%  |
| MI                      | 107             | 110              | 3           | +2.6%  |
| Stroke                  | 120             | 120              | 0           | 0.0%   |
| ESRD                    | 400             | 240              | 160         | +41.7% |
| DEED                    | 50              | 57               | -7          | -1.6%  |
| Hypa                    | 70              | 133              | 63          | +89.0% |
| Death                   | 0               | 0                | 0           | NA     |
| ICER LY                 |                 |                  | -10,926     |        |
| ICER QALY               |                 |                  | -11,628     |        |
| ICER ESRD event avoided |                 |                  | 28,239      |        |



Cost for each ESRD avoided due to Diamicon MR was found to be RM28,239 (USD6,723). We bench-marked our results to the willingness-to-pay for Malaysia which is USD6,835 from a recent study. (2)

## Conclusion

In Malaysia, Diamicon MR can lead to cost savings in managing ESRD compared to generic gliclazide IR from a public payer's perspective.

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