

# Medi Quest BRS Hospital

A monthly News letter from BRS Hospital

## Initiating Oral Anti-Diabetic Therapy: A Stepwise Clinical Guide

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Price Rs. 5/- Only

September - 2025

Medi - 19

Quest - 08

Yearly Subscription

Rs 50/- only

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### Overview of Oral Anti-Diabetic Therapy (OAD) Initiation

This guide provides a stepwise approach to initiating oral anti-diabetic therapy based on HbA1c levels, along with clinical tips for optimising patient outcomes. The recommendations are structured to facilitate decision-making for primary care physicians ensuring that therapy is tailored to individual patient needs and comorbidities.

HbA1c Level	Recommended Action
<7%	Lifestyle Modification (LSM)
7–8.5%	Monotherapy
8.5–10%	Dual Oral Therapy
>10%	Oral therapy with more than two antidiabetic drugs ± Insulin

### Glycemic Targets (American Diabetes Association)

- **Fasting Glucose** : 80–130 mg/dl
- **Postprandial Glucose**: Less than 180 mg/dl two hours after a meal

### Clinical Pearls

- Always confirm borderline HbA1c results with a second reading.
- Assess for acute symptoms such as polyuria, weight loss, and fatigue before making therapeutic decisions.
- Consider patterns in fasting and postprandial glucose in conjunction with HbA1c results.

**Commencement of OADs is based on HbA1c, titration is based on glycemic targets**

### Lifestyle First (For HbA1c <7%)

- **Diet**: Focus on incorporating low glycemic index foods, maintaining portion control, and paying attention to meal timing.
- **Exercise**: Recommend at least 150 minutes per week of moderate physical activity, along with resistance training.
- **Behavioural Support**: Utilise culturally appropriate visuals and goal-setting strategies to support lifestyle changes.

Monotherapy (For HbA1c 7–8.5%)

First-Line: Metformin

Initiate with 500 mg once daily, taken with or immediately after dinner.

Review glycemic control after two weeks. Glycemic control refers to glycemic targets as mentioned above. If control is achieved, continue the same dose.

Titration Schedule (If Glycemic Control Not Achieved):

- Week 2: 500 mg twice daily. If glycemic control not achieved increase Metformin to 500mg twice daily.
- Week 4: 500 mg in the morning and 1000 mg after dinner (if tolerated). If glycemic control not achieved.
- Week 6: 1000 mg in the morning and 1000 mg after dinner

If glycemic control is achieved at any step, maintain the titrated dose.

Monitoring Tips:

- Monitor for gastrointestinal side effects such as bloating and diarrhoea; start with a low dose and increase gradually.
- Check renal function: eGFR should be >45; avoid Metformin if eGFR is <30.
- Monitor vitamin B12 levels annually during long-term use.

Alternatives if Metformin Not Tolerated:

- DPP4 inhibitors (e.g., Sitagliptin, Vildagliptin)
- SGLT2 inhibitors (e.g., Dapagliflozin, Empagliflozin)
- Sulphonylureas (e.g., Glimepiride, Gliclazide SR)

Dual Oral Therapy (For HbA1c 8.5–10% or if Monotherapy Fails)

Common Combinations and Patient Context

Combination	Patient Profile
Metformin + DPP4i	Elderly, renal compromise

Combination	Patient Profile
Metformin + SU	Cost-effective, rapid control, thin patient
Metformin + SGLT2i	Obese, ASCVD, CKD, heart failure

Metformin in Combination Therapy: Dosing Guidelines

1. Metformin with DPP4 Inhibitors

Begin treatment with Metformin 500 mg along with either Vildagliptin or Sitagliptin 50 mg, taken once daily. This regimen is primarily intended to control postprandial blood glucose levels.

If the initial response is insufficient, increase the dosage to Metformin 500 mg plus Vildagliptin or Sitagliptin 50 mg, administered twice daily with meals.

For further titration, prescribe Metformin 500 mg plus Vildagliptin or Sitagliptin 50 mg in the morning, followed by Metformin 1000 mg plus Vildagliptin or Sitagliptin 50 mg at night.

If Glycemic control remains inadequate, escalate to Metformin 1000 mg plus Vildagliptin or Sitagliptin 50 mg in the morning, and repeat the same combination at night.

2. Metformin with Sulphonylureas (SU)

Metformin + Glimepiride

Commence therapy with Metformin 500 mg once daily and add Glimepiride 0.5 mg for elderly patients, 1 mg once daily for other adults. Glimepiride should be taken 15–30 minutes before food, preferably before breakfast.

If response after 2–4 weeks is inadequate, increase Metformin to 500 mg twice daily and up-titrate Glimepiride up to 2 mg once daily.

In cases where Glycemic control is still suboptimal, use Metformin 500 mg in the morning and 1000 mg at night, combined with Glimepiride 0.5–3 mg once daily.

For further titration, prescribe Metformin 1000 mg in both the morning and night, plus Glimepiride 0.5–4 mg once daily, or split the Glimepiride dose into two (2 mg in the morning and 2 mg at night).

## Metformin with Gliclazide SR

Initiate treatment with Metformin 500 mg and Gliclazide SR 30 mg once daily. Gliclazide SR is preferred in elderly patients.

If the response is inadequate, increase to 500 mg Metformin twice daily and Gliclazide 30–60 mg once daily.

For further dose escalation, prescribe Metformin 500 mg in the morning and 1000 mg at night, along with Gliclazide 30–90 mg once daily.

Maximum titration can include Metformin 1000 mg both in the morning and at night along with Gliclazide 30–120 mg once daily.

## 3. Metformin with SGLT2 Inhibitors

### Metformin and Dapagliflozin

Start with Metformin 500 mg once daily plus Dapagliflozin 5 mg once daily. It is important to monitor for potential genital infections and dehydration during therapy.

If a higher dose is needed, increase to Metformin 500 mg twice daily and Dapagliflozin 10 mg once daily.

For additional titration, administer Metformin 500 mg in the morning and 1000 mg at night, together with Dapagliflozin 10 mg once daily.

The maximum recommended dose is Metformin 1000 mg in the morning and 1000 mg at night, along with Dapagliflozin 10 mg once daily.

### Metformin and Empagliflozin

Initiate therapy with Metformin 500 mg once daily and Empagliflozin 10 mg once daily. Monitoring for genital infections and dehydration is advised.

If required, increase the dose to Metformin 500 mg twice daily and Empagliflozin 25 mg once daily.

Further titration includes Metformin 500 mg in the morning and 1000 mg at night, together with Empagliflozin 25 mg once daily.

Maximum dose escalation is Metformin 1000 mg both in the morning and at night, paired with Empagliflozin 25 mg once daily.

## If Dual Therapy does not achieve Glycemic Control

Base Combination	Add-On Options
Metformin + DPP4i	Add SU or Pioglitazone or SGLT2i  If thin, add SU; if obese, has ASCVD or heart failure Add SGLT2i; if NAFLD, add Pioglitazone
Metformin + SGLT2i	Add DPP4i or SU or Pioglitazone
Metformin + SU	Add SGLT2i or DPP4i or Pioglitazone

## Add-On Therapy

### Tailored to Comorbidities

Comorbidity	Preferred Add-On
ASCVD	GLP-1 RA (e.g., Oral Semaglutide)
Heart Failure	SGLT2i
CKD	SGLT2i or GLP-1 RA
Obesity	Oral Semaglutide 3 mg once daily for one month before breakfast, then 7 mg once daily, with escalation to 14 mg once daily as required, or Sulphonylurea

Postprandial Sugar Control Agents

Drug	Dose & Timing
Acarbose	25–50 mg with the first bite of food, 1–3 times per day
Voglibose	0.2–0.3 mg with meals, 1–3 times per day
Repaglinide	0.5–2 mg before meals
	SGLT2i or GLP-1 RA

Cost-Effective Drug Choices

Medications like metformin and sulphonyl ureas continue to be foundational options in diabetes therapy.

Their well-established efficacy, especially in the context of cost-effectiveness, makes them the preferred choices when financial considerations are important for patient management

Conclusion

In summary, the management of type 2 diabetes requires a thoughtful, stepwise approach that takes into account individual patient factors, Glycemic targets, and comorbidities.

Lifestyle modification forms the cornerstone of therapy, with pharmacological agents introduced based on HbA1c levels and specific clinical needs.

When selecting oral anti-diabetic agents, considerations such as efficacy, safety, cost, and patient context are paramount. If optimal glycemic control is not achieved after lifestyle modifications and 3 oral anti diabetic agents , insulin would have to be added. The reader is advised to refer to earlier issues of Mediquest (June and July 2025 Mediquest brshospital.com)regarding the use of insulin in Type II Diabetes

Ultimately, tailored treatment strategies improve patient outcomes and help achieve optimal Glycemic control.