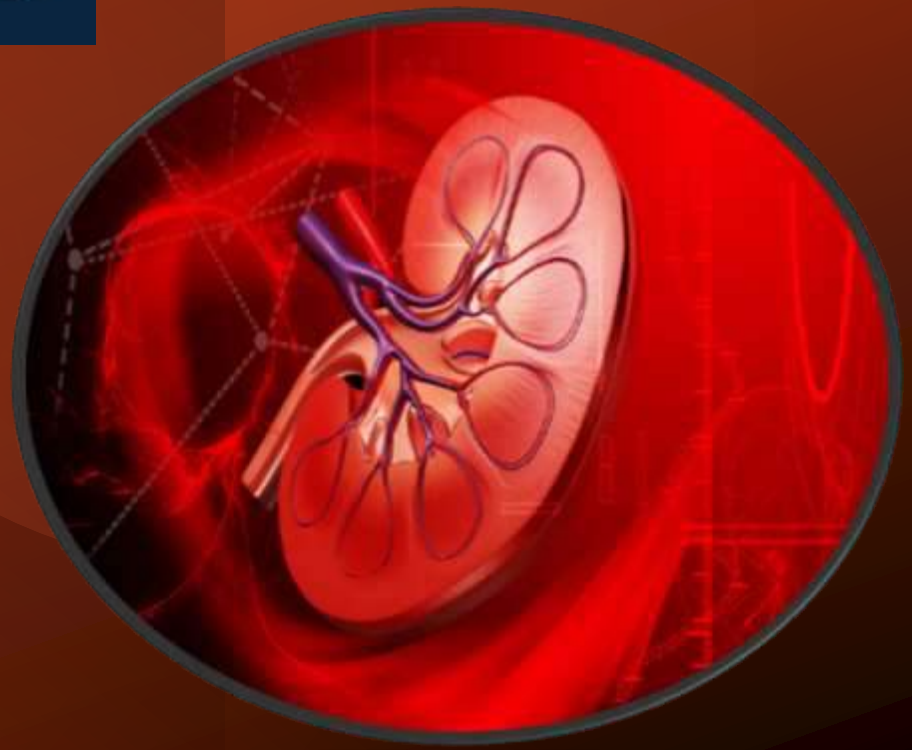
Continuous Glucose Monitoring



Dr Sonu Manuel & Dr. Vilesh valsalan

Use of CGM

Indications

- HbA1c unreliable in CKD due to altered RBC lifespan, ESA/transfusions.
- Glycemic variability and hypoglycemia under-recognized in dialysis.
- Use CGM when:
  - Recurrent hypo/hyperglycemia.
  - Insulin-treated CKD or transplant patients.
  - Suspected “glycemic blindness” in dialysis.
  - Research or audit of glycemic trends.

Clinical Goals

- Identify hidden dysglycemia.
- Optimize insulin/diet/dialysis timing.
- Reduce hypoglycemia and variability

CGM Systems Available in India

Device	Type	Wear Time	Alarms	Calibration
Freestyle Libre Pro / 2	Professional & Real-time	14 days	Optional (Libre 2)	None
Medtronic Guardian Connect	Real-time	7 days	Yes	2/day
Dexcom G7		10 days	Yes	Factory-calibrated
Eversense (Implantable)	Long-term	90 days	Yes	Yes

Indian preference: Libre Pro – easy workflow, minimal calibration, suitable for OPD and dialysis units.

Procedure, Key Metrics, and Interpretation

Clinic protocol

- Identify patient & explain CGM purpose.
- Apply sensor (arm/abdomen); record start date/time.
- Advise normal diet & activity; note dialysis days.
- Retrieve data after 14 days → generate AGP (Ambulatory Glucose Profile).
- Review with team → adjust insulin/diet.

Key Metrics

Metric	Target	Clinical Implication
TIR (70–180 mg/dL)	>70%	Optimal control
Time <70 mg/dL	<4%	Avoid hypoglycemia
GV (CV%)	<36%	Minimize oxidative stress
GMI	—	HbA1c equivalent

Benefits and Practical Insights

Advantages

- Accurate glycemic assessment when HbA1c unreliable.
- Detects intradialytic and nocturnal hypoglycemia.
- Enables fine-tuning insulin, diet, and dialysis protocols.
- Improves patient safety and confidence.

Limitations

- Sensor site reactions, data gaps with hypotension.
- Cost and data interpretation training needed.
- Accuracy may drop with fluid overload or poor perfusion.

CGM bridges the gap left by HbA1c in CKD — a practical, data-driven tool to personalize diabetes care in nephrology practice.

Thank you!