



Meds for Type 2 DM – A Patient Centered Approach

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Meds for Type 2 DM – A Patient Centered Approach



1. Discuss a patient centered approach to manage hyperglycemia.
2. State strategies to treat hyperglycemia from lifestyle to medications.
3. Discuss how the unique characteristics of patients determine the best approach to hyperglycemic management.
4. State the different approaches to glyceimic control

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Management of Hyperglycemia in Type 2 Diabetes: A Patient-Centered Approach

Position Statement of the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)



Diabetes Care 2012;35:1364–1379
Diabetologia 2012;55:1577–1596





ADA-EASD Position Statement: Management of Hyperglycemia in T2DM



1. Patient-Centered Approach

"...providing care that is respectful of and responsive to individual patient preferences, needs, and values - ensuring that patient values guide all clinical decisions."

- Gauge patient's preferred level of involvement.
- Explore, where possible, therapeutic choices.
- Utilize decision aids.



- **Shared decision making** – final decisions re: lifestyle choices ultimately lie with the patient.

Diabetes Care 2012;35:1364–1379
Diabetologia 2012;55:1577–1596

American Diabetes Association. ADA-EASD Position Statement: Management of Hyperglycemia in T2DM EASD

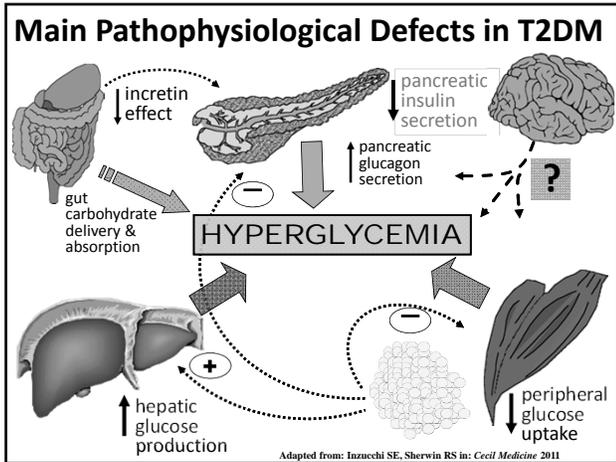
2. BACKGROUND

- Overview of the pathogenesis of T2DM



- Insulin secretory dysfunction
- Insulin resistance (muscle, fat, liver)
- Increased endogenous glucose production
- Deranged adipocyte biology
- Decreased incretin effect
- Increased renal glucose reabsorption

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3. ANTI-HYPERGLYCEMIC THERAPY

- Glycemic targets

- HbA1c < 7.0% (mean PG ~150-160 mg/dl [8.3-8.9 mmol/l])
- Pre-prandial PG <130 mg/dl (7.2 mmol/l)
- Post-prandial PG <180 mg/dl (10.0 mmol/l)
- Individualization is key:
 - Tighter targets (6.0 - 6.5%) - younger, healthier
 - Looser targets (7.5 - 8.0%+) - older, comorbidities, hypoglycemia prone, etc.
- Avoidance of hypoglycemia

PG = plasma glucose Diabetes Care 2012;35:1364-1379
Diabetologia 2012;55:1577-1596

American Diabetes Association. ADA-EASD Position Statement: Management of Hyperglycemia in T2DM **EASD**

3. ANTI-HYPERGLYCEMIC THERAPY

- Therapeutic options: Insulin



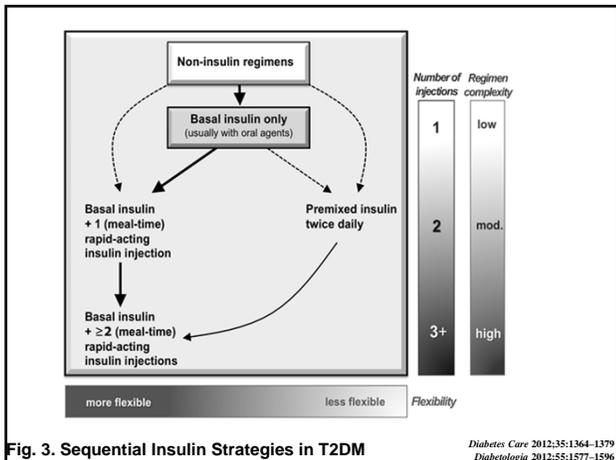
- Human Neutral protamine Hagedorn (NPH)
- Human Regular
- Basal analogues (glargine, detemir)
- Rapid analogues (lispro, aspart, glulisine)
- Pre-mixed varieties

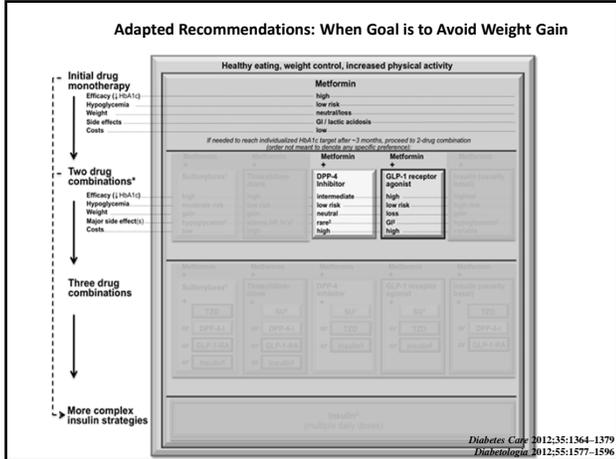
*Diabetes Care 2012;35:1364-1379
Diabetologia 2012;55:1577-1596*

Insulin PocketCard™ *Diabetes Education* **15 years**

Action	Insulin Name	Onset	Peak	Effective Duration	Considerations	
Bolus	Rapid Acting Analogs	Aspart (Novolog)	5 - 15 min	30 - 90 min	< 5 hrs	Bolus insulin lowers after-meal glucose. Efficacy reflected in post-meal BG.
		Lispro (Humalog)				
		Glulisine (Apidra)				
	Short Acting	Regular	30 - 60 min	2 - 3 hrs	5 - 8 hrs	Basal insulin controls BG between meals and HS. Efficacy reflected in fasting BG.
Basal	Intermediate	NPH	2 - 4 hrs	4 - 10 hrs	10 - 16 hrs	
	Long Acting	Detemir (Levemir)	3 - 8 hrs	No peak	6 - 24 hrs	Side effects: hypoglycemia, weight gain.
		Glargine (Lantus)	2 - 4 hrs	No peak	20 - 24 hrs	
Bolus + Basal	Intermediate + rapid	Novolog® Mix 70/30 70/30 = 70% NPL + 30% aspart	5 - 15 min	Dual peaks	10 - 16 hrs	Typical dosing range: 0.5-1.0 units/kg body weight. Discard opened insulin vials after 28 days.
		Humalog® Mix 75/25 = 75% NPL + 25% lispro 50/50 = 50% NPL + 50% lispro				
	Intermediate + short	Combo of NPH + Reg 70/30 = 70% NPH + 30% Reg 50/50 = 50% NPH + 50% Reg	30 - 60 min	Dual peaks	10 - 16 hrs	

Adapted from American Association of Clinical Endocrinologists Guidelines 2007. Because insulin action times can vary with each injection, time periods listed here are general guidelines only; please consult prescribing information for details. REV 09/2013 ©2013





American Diabetes Association. ADA-EASD Position Statement: Management of Hyperglycemia in T2DM **EASD**

4. OTHER CONSIDERATIONS

- **Comorbidities**
 - Coronary Disease ----->
 - Heart Failure
 - Renal disease
 - Liver dysfunction
 - Hypoglycemia

- > Metformin: CVD benefit (UKPDS)
- > Avoid hypoglycemia
- > ? Sulfonylureas may increase cardiac ischemic preconditioning
- > ? Pioglitazone & ↓ CVD events

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KEY POINTS

- Glycemic targets & BG-lowering therapies must be individualized.
- Diet, exercise, & education: foundation of any T2DM therapy program
- Unless contraindicated, metformin = optimal 1st-line drug.
- After metformin, data are limited. Combination therapy with 1-2 other oral / injectable agents is reasonable; minimize side effects.
- Ultimately, many patients will require insulin therapy alone / in combination with other agents to maintain BG control.
- All treatment decisions should be made in conjunction with the patient (focus on preferences, needs & values.)
- Comprehensive CV risk reduction - a major focus of therapy.

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American Diabetes Association **EASD**

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