Algoritmo terapeutico AACE-AME 2018 per il Diabete tipo 2

Relatore:
Giorgio Borretta

Q&A:
Franco Grimaldi e Enrico Papini

Conflitti di interesse

- Ai sensi dell'art. 3.3 sul conflitto di interessi, pag 17 del Regolamento Applicativo Stato-Regioni del 5/11/2009, dichiaro che negli ultimi 2 anni ho avuto rapporti diretti di finanziamento con i seguenti soggetti portatori di interessi commerciali in campo sanitario:

NESSUNO

ITALIAN CHAPTER

LE LINEE GUIDA AACE 2017: VERSO UN NUOVO APPROCCIO AL DIABETE TIPO 2

Giorgio Borretta, Olga Disoteo,
Edoardo Guastamacchia, Agostino Paoletta,
Enrico Papini, Silvio Settembrini
on behalf of the AACE Italian Chapter/AME Panel of Experts


LINEE GUIDA
PER IL TRATTAMENTO INTEGRATO
DEL DIABETE MELLITO 2015 - 2017
CONSENSUS STATEMENT
SU UN ALGORITMO
DI TRATTAMENTO INTEGRATO
DEL DIABETE MELLITO TIPO 2
RACCOMANDAZIONI OPERATIVE 2017
AMERICAN ASSOCIATION
OF CLINICAL ENDOCRINOLOGISTS
& AMERICAN COLLEGE
OF ENDOCRINOLOGY

Hanno collaborato alle Linee Guida:

Enrico Papini, Albano Laziale (RM)
Roberto Attanasio, Milano
Giorgio Borretta, Cuneo
Davide Brancato, Palermo
Marco Caputo, Venezia Mestre
Sara Cassibba, Bergamo
Roberto Castello, Verona
Elena Cimino, Monza
Ilaria Dalle Mule, Legnano (MI)
Rossella Dionisio, Milano
Olga Disoteo, Milano
Vito Angelo Giagulli, Conversano (BA)
Edoardo Guastamacchia, Bari
Damiano Gullo, Catania
Luigi Liparulo, Como
Valentina Lombardi, Sesto S. Giovanni (MI)
Pietro Lucotti, Pavia
Maurizio Nizzoli, Forlì
Agostino Paoletta, Cittadella (PD)
Maria Antonietta Pellegrini, Udine
Barbara Pirali, Castellanza (VA)
Silvio Settembrini, Napoli
Francesco Tassone, Cuneo
Vincenzo Triggiani, Bari

PERCHÉ UNA NUOVA LINEA GUIDA?

Nel corso degli ultimi anni la gestione della malattia diabetica ha presentato miglioramenti potenzialmente determinanti attraverso:

- La creazione di nuove categorie di farmaci, attivi sulla glicemia con modalità fisiologiche
- La disponibilità di strumenti di monitoraggio glicemico perfezionati
- L'introduzione di farmaci in grado di contrastare più efficacemente le alterazioni metaboliche correlate.

PERCHÉ UNA NUOVA LINEA GUIDA?

Questi strumenti consentono di:

- **Fissare obiettivi glicemici più ambiziosi per larga parte dei pazienti**
- **Ridurre il rischio di ipoglicemia**
- **Ridurre e controllare nel tempo l'eccesso ponderale**
- **Intervenire incisivamente sui fattori di rischio cardio-vascolare**
- **Migliorare la QoL dei diabetici.**

PERCHÉ UNA NUOVA LINEA GUIDA ITALIANA?

ITALIAN CHAPTER

Per questi motivi l'AACE Italian Chapter, sezione italiana dell'American Association of Clinical Endocrinologists, e l'AME hanno creato nel 2016 un pannello di esperti finalizzato alla:

- traduzione del documento

- rivalutazione dei suoi contenuti

- contestualizzazione alla realtà assistenziale italiana

AACE/ACE Comprehensive Type 2 Diabetes Management Algorithm

2018

TASK FORCE

Alan J. Garber, MD, PhD, FACE, Chair

Martin J. Abrahamson, MD
Joshua I. Barzilay, MD, FACE
Lawrence Blonde, MD, FACP, MACE
Zachary T. Bloomgarden, MD, MACE
Michael A. Bush, MD
Samuel Dagogo-Jack, MD, FACE
Ralph A. DeFronzo, MD
Daniel Einhorn, MD, FACP, FACE
Vivian A. Fonseca, MD, FACE
Jeffrey R. Garber, MD, FACP, FACE
W. Timothy Garvey, MD, FACE
George Grunberger, MD, FACP, FACE
Yehuda Handelsman, MD, FACP, FNLA, FACE
Irl B. Hirsch, MD
Paul S. Jellinger, MD, MACE
Janet B. McGill, MD, FACE
Jeffrey I. Mechanick, MD, FACP, FACE, FACN, ECNU
Paul D. Rosenblit, MD, PhD, FNLA, FACE
Guillermo Umpierrez, MD, FACP, FACE

 DOI 10.4158/CS-2017-0153

Table of Contents

COMPREHENSIVE TYPE 2 DIABETES MANAGEMENT ALGORITHM

 DOI 10.4158/CS-2017-0153

Principles of the AACE/ACE Comprehensive Type 2 Diabetes Management Algorithm

1.	Lifestyle modification underlies all therapy (e.g. weight, exercise, sleep, etc.)
2.	Avoid hypoglycemia
3.	Avoid weight gain
4.	Individualize all glycemic targets (A1c, FPG, PPG)
5.	Optimal A1c is ≤ 6.5%, or as close to normal as is safe and achievable
6.	Therapy choices are affected by initial A1c, duration of diabetes, and obesity status
7.	Choice of therapy reflects cardiac, cerebrovascular, and renal status
8.	Comorbidities must be managed for comprehensive care
9.	Get to goal as soon as possible – adjust at ≤ 3 months until at goal
10.	Choice of therapy includes ease of use and affordability

 DOI 10.4158/CS-2017-0153

Lifestyle Therapy

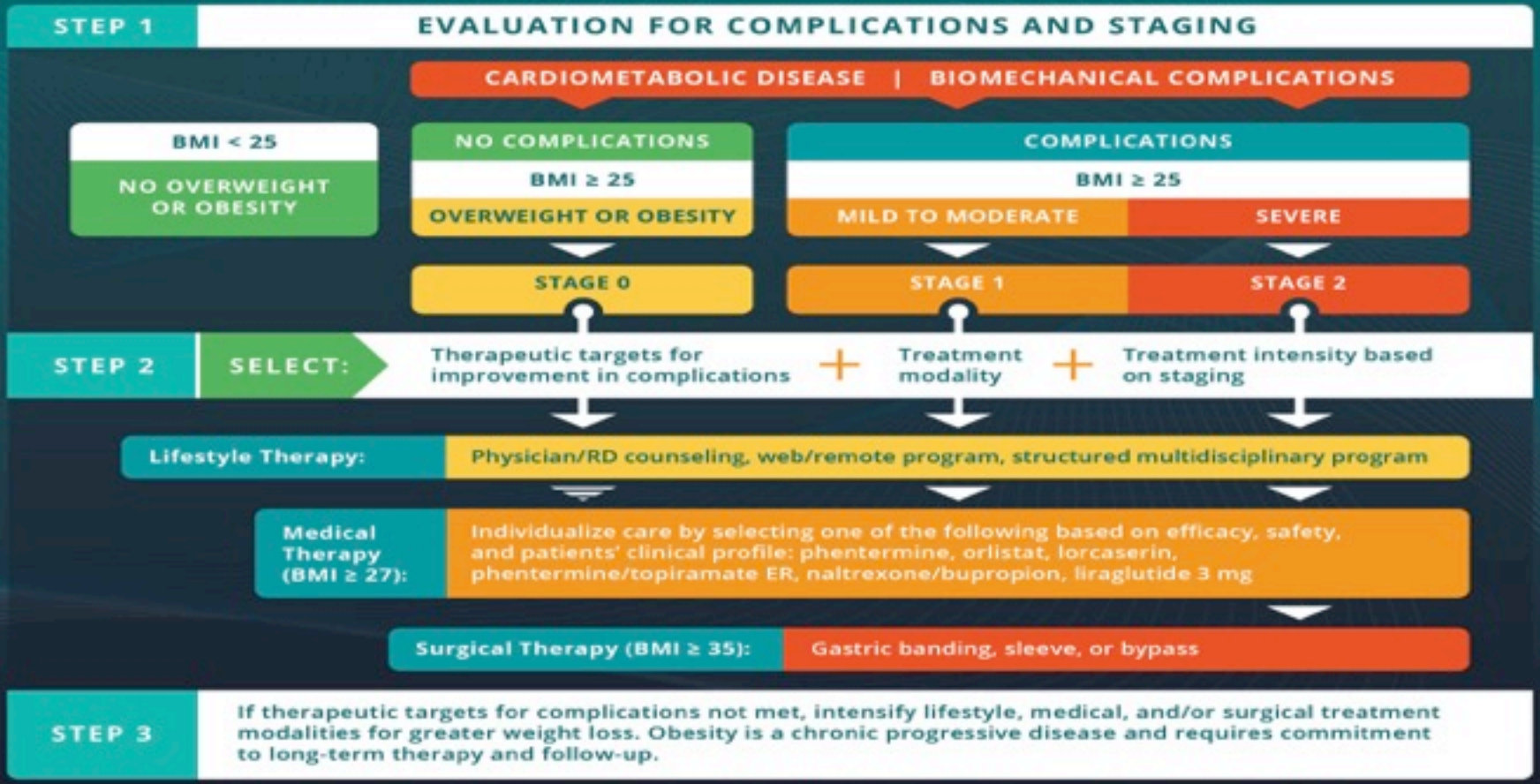
RISK STRATIFICATION FOR DIABETES COMPLICATIONS

INTENSITY STRATIFIED BY BURDEN OF OBESITY AND RELATED COMPLICATIONS

Nutrition	• Maintain optimal weight • Calorie restriction (if BMI is increased) • Plant-based diet; high polyunsaturated and monounsaturated fatty acids	• Avoid *trans* fatty acids; limit saturated fatty acids	• Structured counseling • Meal replacement
Physical Activity	• 150 min/week moderate exertion (eg, walking, stair climbing) • Strength training • Increase as tolerated	• Structured program • Wearable technologies	• Medical evaluation/ clearance • Medical supervision
Sleep	• About 7 hours per night • Basic sleep hygiene	• Screen OSA • Home sleep study	• Referral to sleep lab
Behavioral Support	• Community engagement • Alcohol moderation	• Discuss mood with HCP	• Formal behavioral therapy
Smoking Cessation	• No tobacco products	• Nicotine replacement therapy	• Referral to structured program

 DOI 10.4158/CS-2017-0153

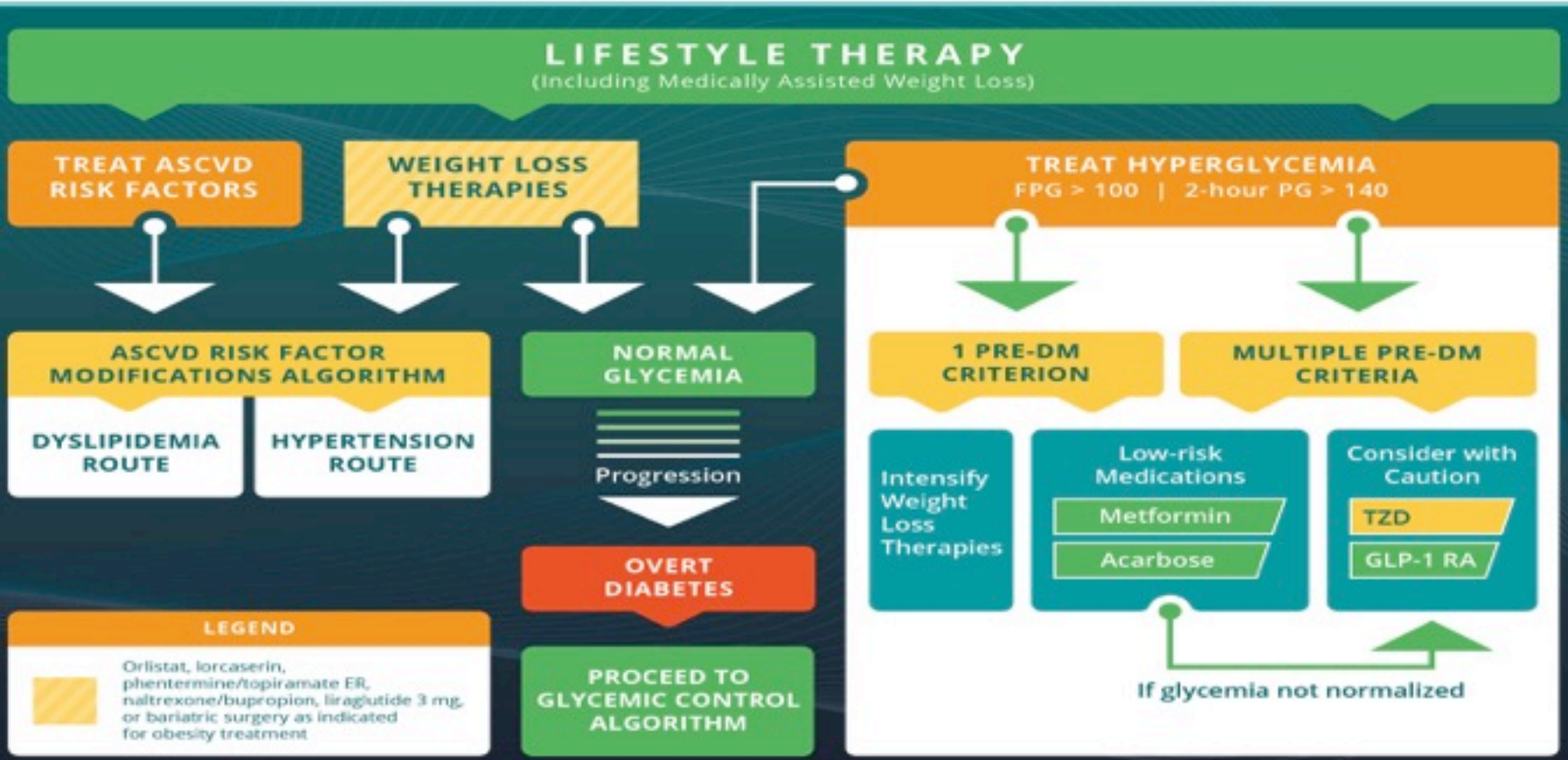
Complications-Centric Model for Care of the Patient with Overweight/Obesity



 DOI 10.4158/CS-2017-0153

Prediabetes Algorithm

IFG (100–125) | IGT (140–199) | METABOLIC SYNDROME (NCEP 2001)



 DOI 10.4158/CS-2017-0153

ASCVD Risk Factor Modifications Algorithm

DYSLIPIDEMIA

LIFESTYLE THERAPY (Including Medically Assisted Weight Loss)

LIPID PANEL: Assess ASCVD Risk

STATIN THERAPY
If TG > 500 mg/dL, fibrates, Rx-grade omega-3 fatty acids, niacin

If statin-intolerant

Try alternate statin, lower statin dose or frequency, or add nonstatin LDL-C- lowering therapies

Repeat lipid panel; assess adequacy, tolerance of therapy

Intensify therapies to attain goals according to risk levels

RISK LEVELS	HIGH	VERY HIGH	EXTREME
	DESIRABLE LEVELS	DESIRABLE LEVELS	DESIRABLE LEVELS
LDL-C (mg/dL)	<100	<70	<55
Non-HDL-C (mg/dL)	<130	<100	<80
TG (mg/dL)	<150	<150	<150
Apo B (mg/dL)	<90	<80	<70

RISK LEVELS:
- **HIGH:** DM but no other major risk and/or age <40
- **VERY HIGH:** DM + major ASCVD risk(s) (HTN, Fam Hx, low HDL-C, smoking, CKD3,4)*
- **EXTREME:** DM plus established clinical CVD

If not at desirable levels: Intensify lifestyle therapy (weight loss, physical activity, dietary changes) and glycemic control; consider additional therapy

To lower LDL-C:	Intensify statin, add ezetimibe, PCSK9i, colesevelam, or niacin
To lower Non-HDL-C, TG:	Intensify statin and/or add Rx-grade OM3 fatty acid, fibrate, and/or niacin
To lower Apo B, LDL-P:	Intensify statin and/or add ezetimibe, PCSK9i, colesevelam, and/or niacin
To lower LDL-C in FH:**	Statin + PCSK9i

Assess adequacy & tolerance of therapy with focused laboratory evaluations and patient follow-up

HYPERTENSION

GOAL: SYSTOLIC <130, DIASTOLIC <80 mm Hg

ACEi or ARB

For initial blood pressure >150/100 mm Hg:
DUAL THERAPY

ACEi or ARB + Calcium Channel Blocker ✓ / ß-blocker ✓ / Thiazide ✓

If not at goal (2–3 months)

Add calcium channel blocker, ß-blocker or thiazide diuretic

If not at goal (2–3 months)

Add next agent from the above group, repeat

If not at goal (2–3 months)

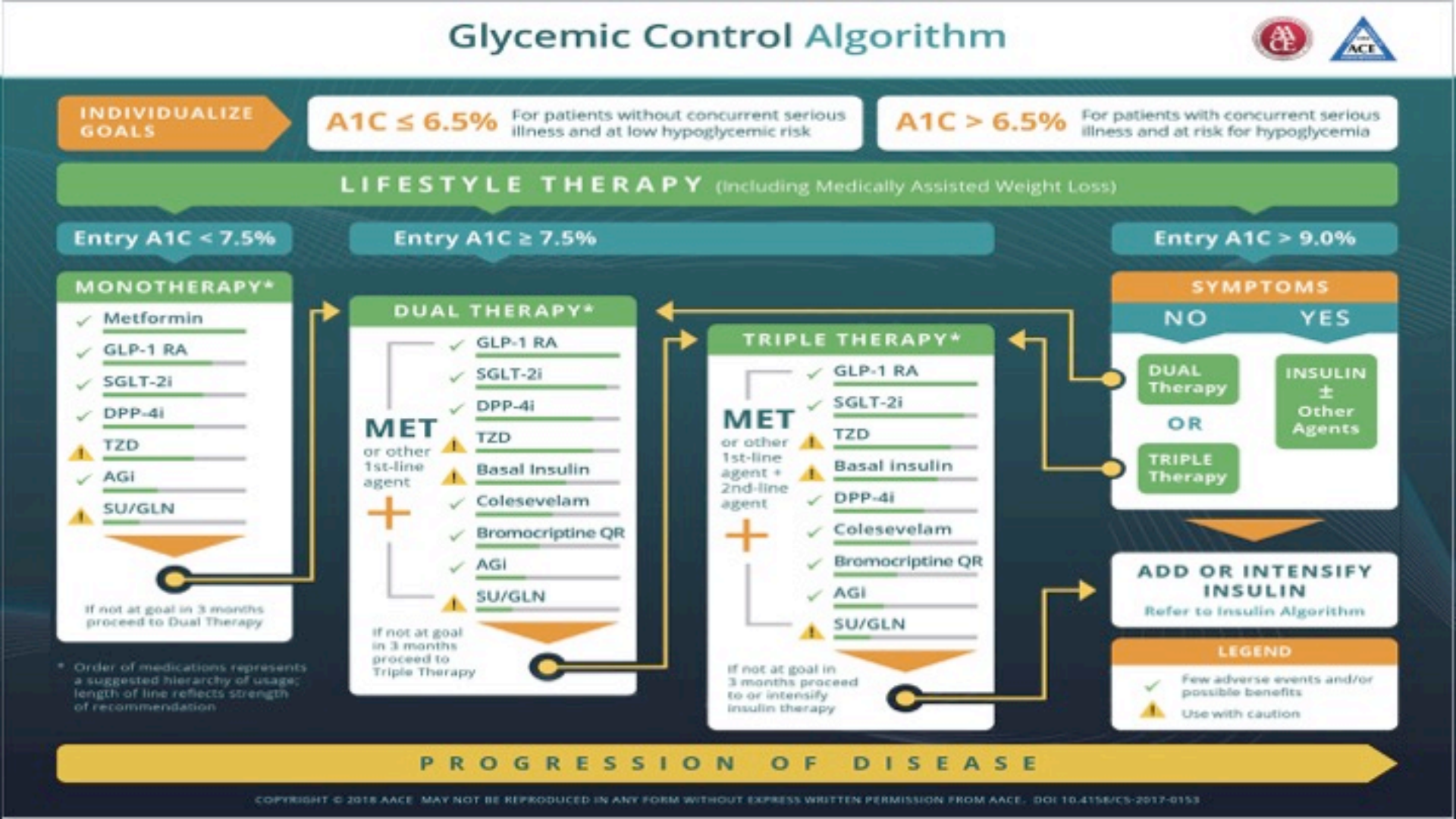
Additional choices (α-blockers, central agents, vasodilators, aldosterone antagonist)

Achievement of target blood pressure is critical

* EVEN MORE INTENSIVE THERAPY MIGHT BE WARRANTED ** FAMILIAL HYPERCHOLESTEROLEMIA

 DOI 10.4158/CS-2017-0153

Glycemic Control Algorithm



 DOI 10.4158/CS-2017-0153

Algorithm for Adding/Intensifying Insulin

START BASAL (Long-Acting Insulin)

A1C < 8% — **TDD 0.1–0.2 U/kg**

A1C > 8% — **TDD 0.2–0.3 U/kg**

Insulin titration every 2–3 days to reach glycemic goal:

- Fixed regimen: Increase TDD by 2 U
- Adjustable regimen:
  - FBG > 180 mg/dL: add 20% of TDD
  - FBG 140–180 mg/dL: add 10% of TDD
  - FBG 110–139 mg/dL: add 1 unit
- If hypoglycemia, reduce TDD by:
  - BG < 70 mg/dL: 10% – 20%
  - BG < 40 mg/dL: 20% – 40%

Consider discontinuing or reducing sulfonylurea after starting basal insulin (basal analogs preferred to NPH)

***Glycemic Goal:**

- <7% for most patients with T2D; fasting and premeal BG < 110 mg/dL; absence of hypoglycemia
- A1C and FBG targets may be adjusted based on patient's age, duration of diabetes, presence of comorbidities, diabetic complications, and hypoglycemia risk

Glycemic Control Not at Goal*

INTENSIFY (Prandial Control)

Add GLP-1 RA
Or SGLT-2i
Or DPP-4i

Add Prandial Insulin

Basal Plus 1, Plus 2, Plus 3

- Begin prandial insulin before largest meal
- If not at goal, progress to injections before 2 or 3 meals
- **Start: 10% of basal dose or 5 units**

Basal Bolus

- Begin prandial insulin before each meal
- 50% Basal / 50% Prandial TDD 0.3–0.5 U/kg
- **Start: 50% of TDD in three doses before meals**

Insulin titration every 2–3 days to reach glycemic goal:

- Increase prandial dose by 10% or 1-2 units if 2-h postprandial or next premeal glucose consistently > 140 mg/dL
- If hypoglycemia, reduce TDD basal and/or prandial insulin by:
  - BG consistently < 70 mg/dL: 10% - 20%
  - Severe hypoglycemia (requiring assistance from another person) or BG < 40 mg/dL: 20% - 40%

 DOI 10.4158/CS-2017-0153

Profiles of Antidiabetic Medications

	MET	GLP-1 RA	SGLT-2i	DPP-4i	AGi	TZD (moderate dose)	SU / GLN	COLSVL	BCR-QR	INSULIN	PRAML
HYPO	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	SU: Moderate/Severe; GLN: Mild	Neutral	Neutral	Moderate to Severe	Neutral
WEIGHT	Slight Loss	Loss	Loss	Neutral	Neutral	Gain	Gain	Neutral	Neutral	Gain	Loss
RENAL / GU	Contra-indicated if eGFR < 30 mL/min/1.73 m²	Exenatide Not Indicated CrCl < 30 Possible Benefit of Liraglutide	Not Indicated for eGFR < 45 mL/min/1.73 m² Genital Mycotic Infections Possible Benefit of Empagliflozin	Dose Adjustment Necessary (Except Linagliptin) Effective in Reducing Albuminuria	Neutral	Neutral	More Hypo Risk	Neutral	Neutral	More Hypo Risk	Neutral
GI Sx	Moderate	Moderate	Neutral	Neutral	Moderate	Neutral	Neutral	Mild	Moderate	Neutral	Moderate
CHF	Neutral	See #1	See #2	See #3	Neutral	Moderate	Neutral	Neutral	Neutral	CHF Risk	Neutral
CARDIAC ASCVD						May Reduce Stroke Risk	Possible ASCVD Risk	Benefit	Safe	Neutral	
BONE	Neutral	Neutral	Mild Fracture Risk	Neutral	Neutral	Moderate Fracture Risk	Neutral	Neutral	Neutral	Neutral	Neutral
KETOACIDOSIS	Neutral	Neutral	DKA Can Occur in Various Stress Settings	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral

Few adverse events or possible benefits

Likelihood of adverse effects

Use with caution

1. Liraglutide—FDA approved for prevention of MACE events.
2. Empagliflozin—FDA approved to reduce CV mortality. Canagliflozin shown to reduce MACE events.
3. Possible increased hospitalizations for heart failure with alogliptin and saxagliptin.

 DOI 10.4158/CS-2017-0153

Ci diamo appuntamento a Roma in occasione del nostro Congresso Nazionale per gli aggiornamenti AACE Italian Chapter-AME del 2018