


12º ENDO SUL

12º CONGRESSO DE ENDOCRINOLOGIA E METABOLOGIA DA REGIÃO SUL
CONGRESSO CATARINENSE DE ENDOCRINOLOGIA E METABOLOGIA 2018

05 a 07 de julho de 2018 | Florianópolis - SC

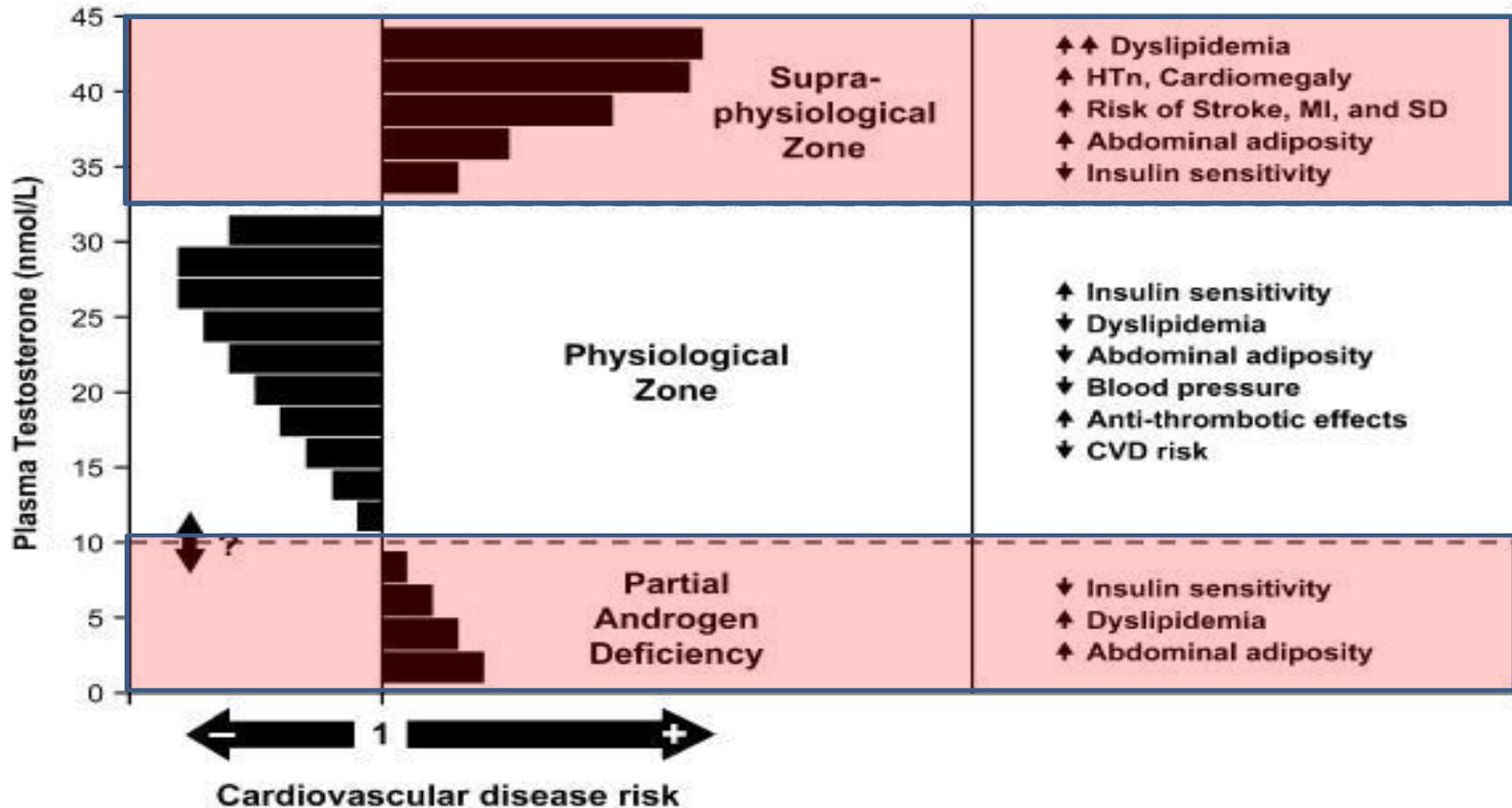
Hot Topics - Testosterona Risco Cardiovascular

João Paulo Iazigi

**Não tenho conflito de interesses
para esta apresentação**

Níveis de testosterona e risco cardiovascular

A janela fisiológica.



Blouin K, et al. J Steroid Biochem Mol Biol 2008;108:272

Testosterone Deficiency

Abdulmageed M. Traish, MBA, PhD,^{a,b} Martin M. Miner, MD,^{b,c} Abraham Morgentaler, MD,^{b,d} Michael Zitzmann, MD^{b,e}
The American Journal of Medicine (2011) 124, 578-587

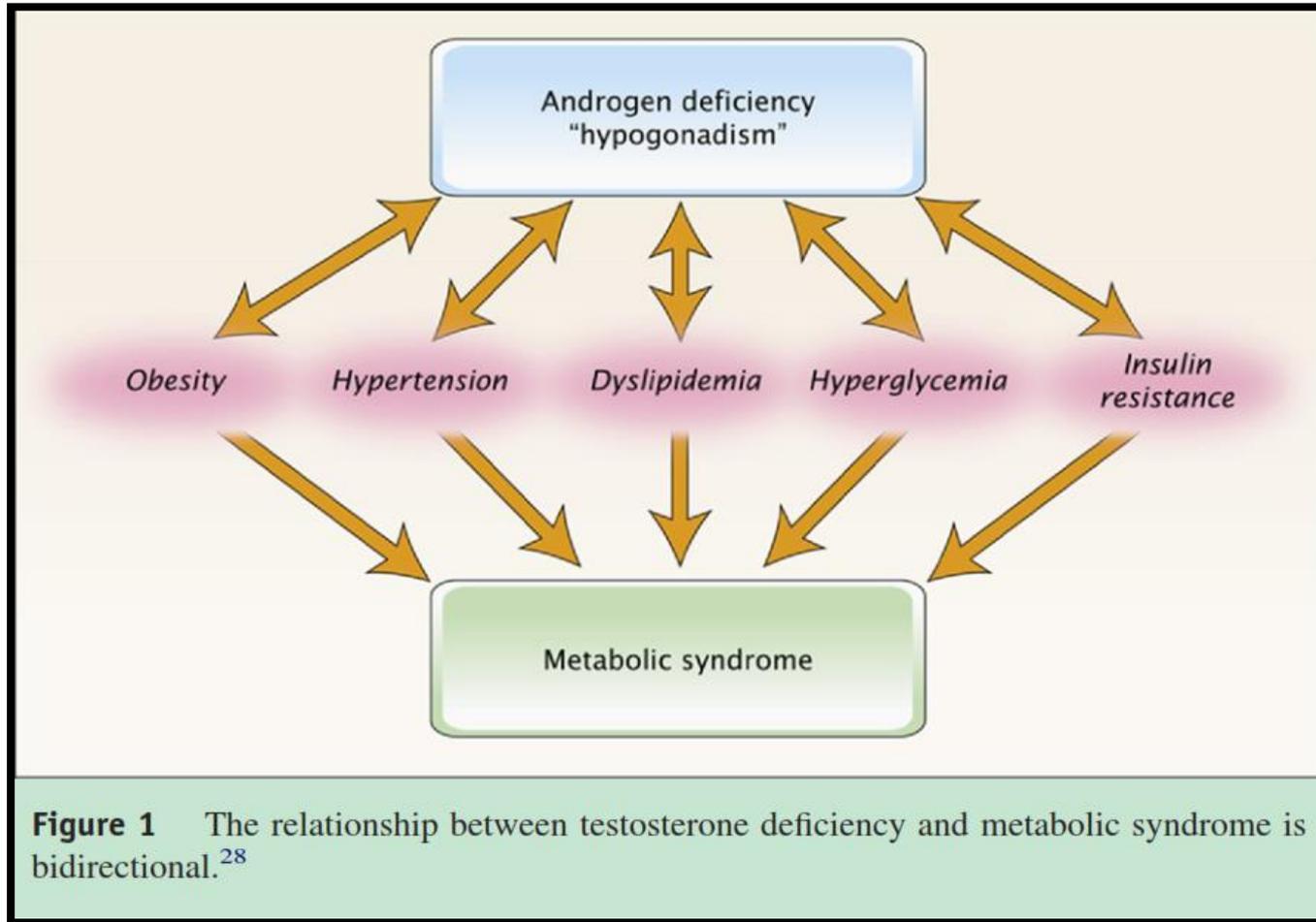
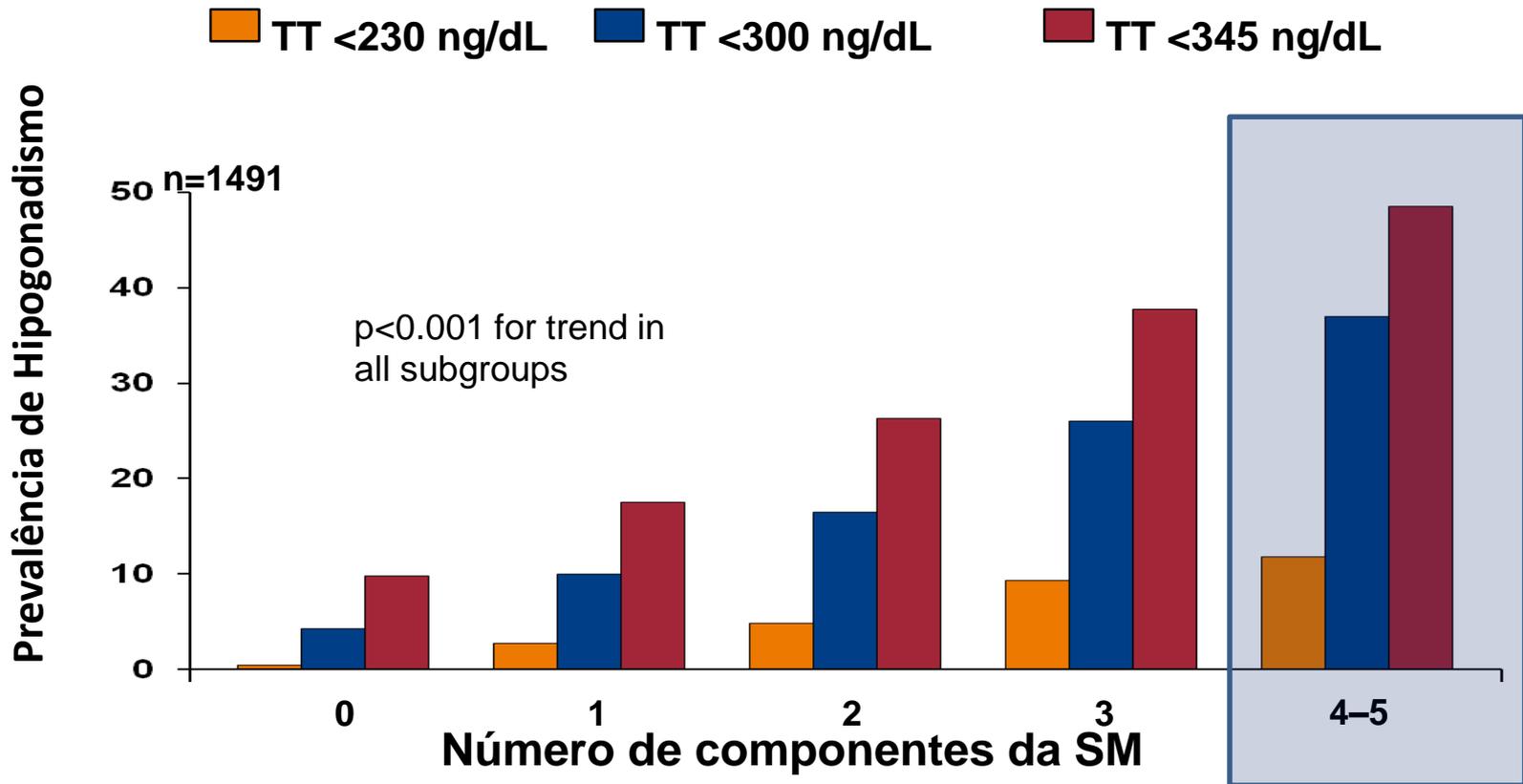


Figure 1 The relationship between testosterone deficiency and metabolic syndrome is bidirectional.²⁸

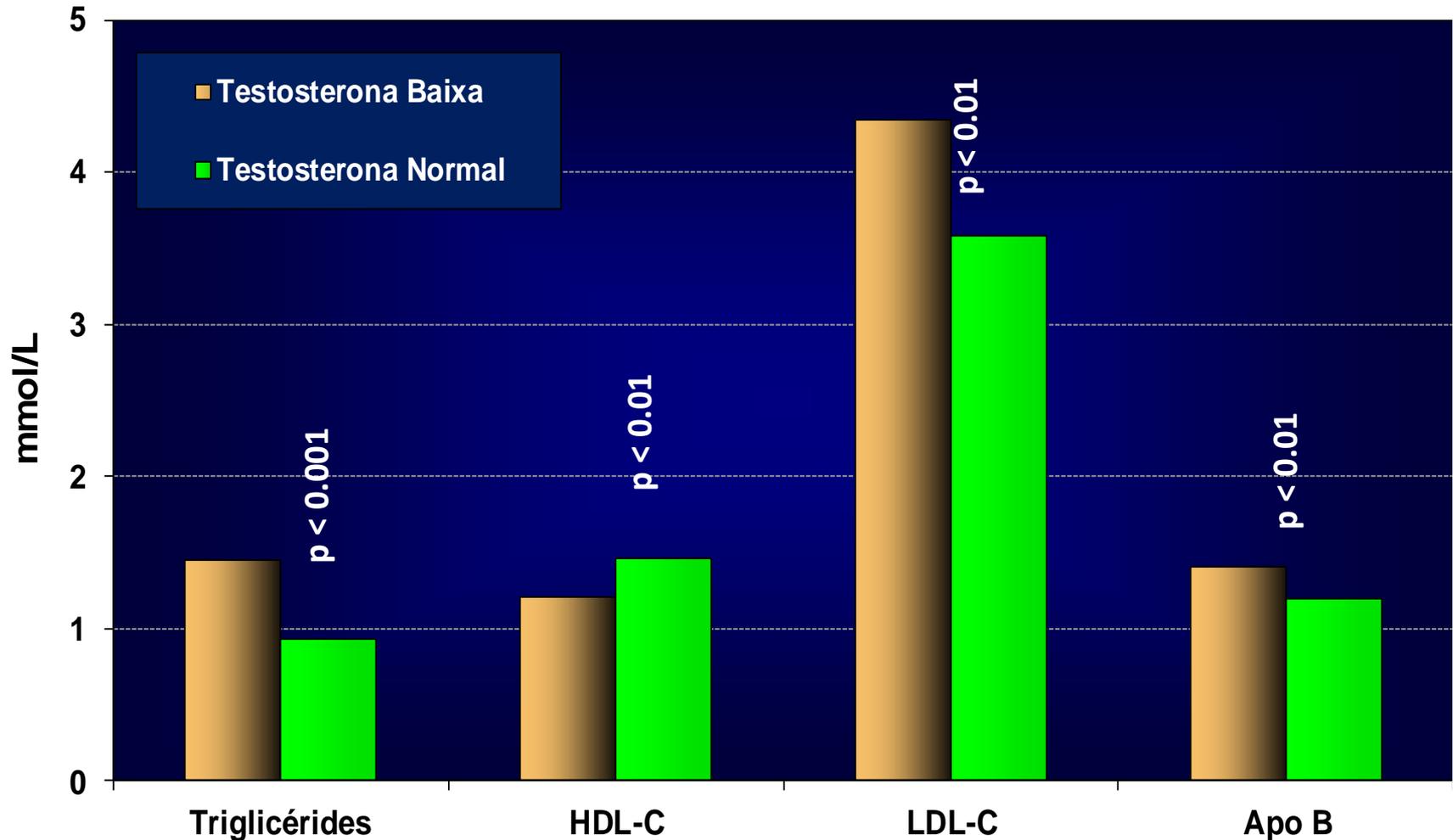
**A SÍNDROME METABÓLICA AUMENTA O RISCO
DE HIPOGONADISMO ?**

Níveis de T total diminuem com o aumento do número de componentes da Síndrome Metabólica



**O HIPOGONADISMO AUMENTA O RISCO DE
SÍNDROME METABÓLICA ?**

Associação entre Testosterona e Fatores de Risco Cardiovascular em Homens Adultos Saudáveis: **Estudo Telecom**



Testosterone Therapy in Men With Hypogonadism: An Endocrine Society* Clinical Practice Guideline

Shalender Bhasin,¹ Juan P. Brito,² Glenn R. Cunningham,³ Frances J. Hayes,⁴
Howard N. Hodis,⁵ Alvin M. Matsumoto,⁶ Peter J. Snyder,⁷ Ronald S. Swerdloff,⁸
Frederick C. Wu,⁹ and Maria A. Yialamas¹⁰

¹Brigham and Women's Hospital, Boston, Massachusetts 02115; ²Mayo Clinic, Rochester, Minnesota 55905; ³Baylor College of Medicine, Houston, Texas 77030; ⁴Massachusetts General Hospital, Boston, Massachusetts 02114; ⁵Keck School of Medicine, University of Southern California, Los Angeles, California 90033; ⁶Veterans Affairs Puget Sound Health Care System, Seattle, Washington 98108; ⁷Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania 19104; ⁸Harbor-UCLA Medical Center, Torrance, California 90502; ⁹University of Manchester, Manchester M13 9PL, United Kingdom; and ¹⁰Brigham and Women's Hospital, Boston, Massachusetts 02115

Hipogonadismo

Sintomas

+

Texto baixa
< 264 ng/dL

Avaliar
contra-indicações

Diagnosis

Diagnosis of Hypogonadism in Men

Diagnosis of Men with Suspected Hypogonadism

- Endocrine Society (ES) recommends diagnosing hypogonadism in men with symptoms and signs of testosterone deficiency and unequivocally and consistently low serum total testosterone (TT) and/or free testosterone (FT) concentrations (when indicated). (1|⊕⊕⊕○)

Screening and Case Detection for Hypogonadism

- ES recommends against routine screening of men in the general population for hypogonadism. (1|⊕⊕○○)

Distinguishing Between Primary or Secondary Hypogonadism

- In men who have hypogonadism, ES recommends distinguishing between primary (testicular) and secondary (pituitary-hypothalamic) hypogonadism by measuring serum luteinizing hormone and follicle-stimulating hormone concentrations. (1|⊕⊕⊕○)

Hipogonadismo e Sintomas

Table 3. Symptoms and Signs Suggestive of T Deficiency in Men

Specific symptoms and signs

Incomplete or delayed sexual development
Loss of body (axillary and pubic) hair
Very small testes (<6 mL)

Suggestive symptoms and signs

Reduced sexual desire (libido) and activity
Decreased spontaneous erections, erectile dysfunction
Breast discomfort, gynecomastia
Eunuchoidal body proportions
Inability to father children, low sperm count
Height loss, low-trauma fracture, low BMD
Hot flushes, sweats

Nonspecific symptoms and signs associated with testosterone deficiency

Decreased energy, motivation, initiative, and self-confidence
Feeling sad or blue, depressed mood, persistent low-grade depressive disorder
Poor concentration and memory
Sleep disturbance, increased sleepiness
Mild unexplained anemia (normochromic, normocytic)
Reduced muscle bulk and strength
Increased body fat, body mass index

Adapted with permission from Bhasin *et al.* (7).

Testosterona baixa e mortalidade CV

SPECIAL FEATURE

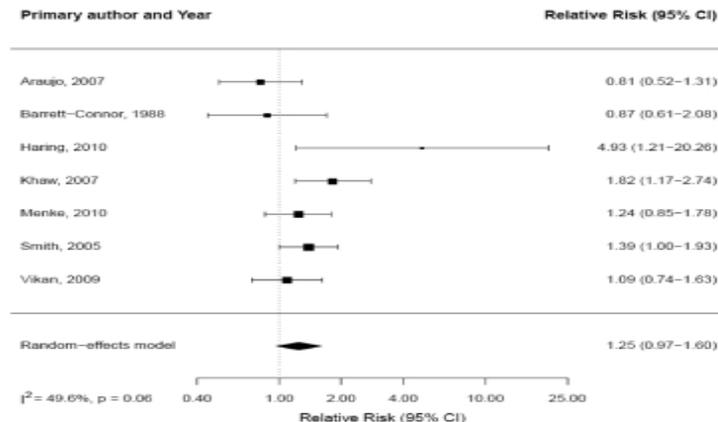
Clinical Review

Endogenous Testosterone and Mortality in Men: A Systematic Review and Meta-Analysis

Andre B. Araujo, Julia M. Dixon, Elizabeth A. Suarez, M. Hassan Murad,
Lin T. Guey, and Gary A. Wittert

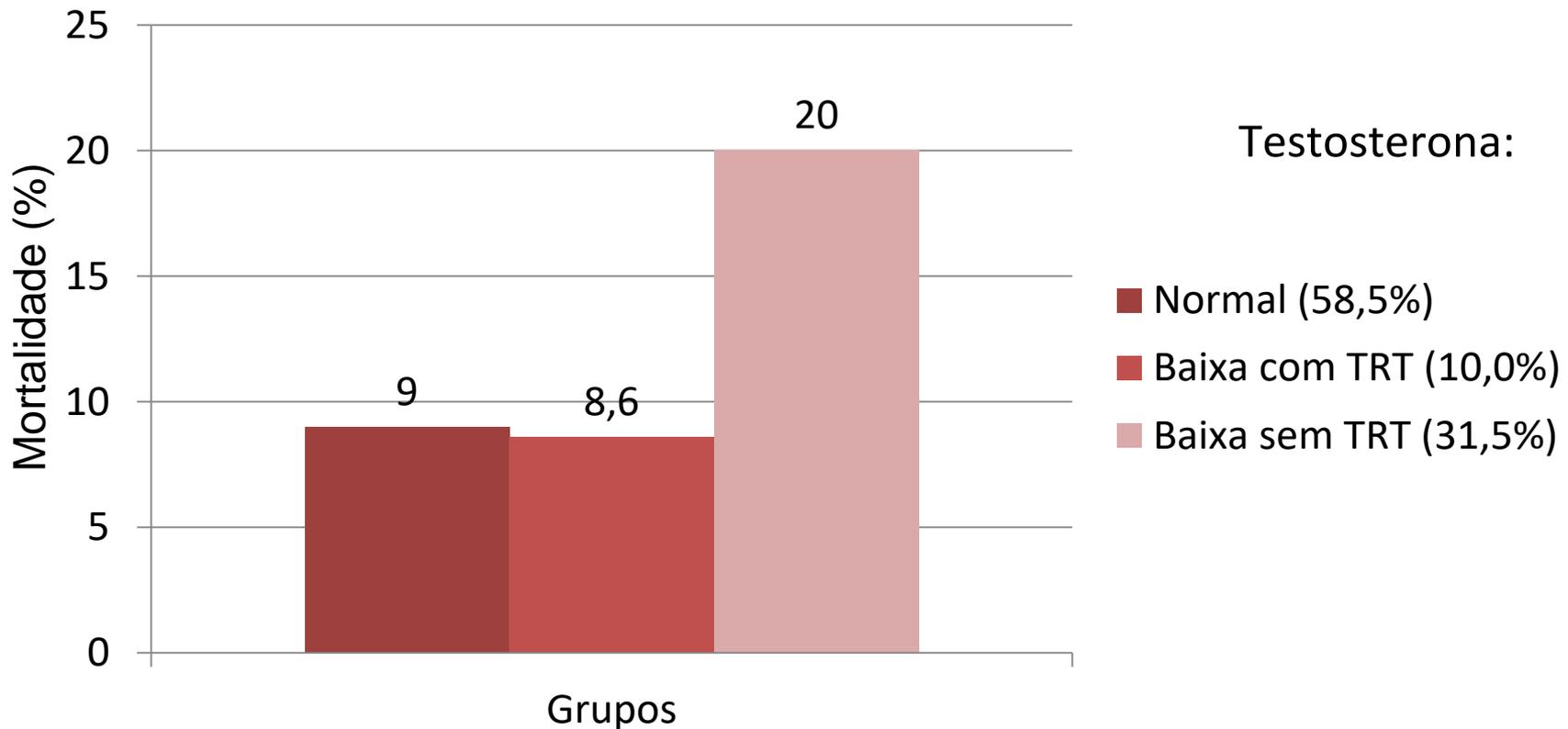
Department of Epidemiology (A.B.A., J.M.D., E.A.S., L.T.G.), New England Research Institutes, Inc., Watertown, Massachusetts 02472; Division of Preventative Medicine (M.H.M.), Mayo Clinic, Rochester, Minnesota 55905; and Department of Medicine (G.A.W.), University of Adelaide, Adelaide, South Australia 5005, Australia

B CVD Mortality



Níveis baixos de testosterona são preditivos de aumento de mortalidade e TRT melhora a sobrevida em homens com DM2

581 homens DM2; Idade: $59,5 \pm 10,8$ anos; Acompanhamento: $5,8 \pm 1,7$ anos
TT normal $> 10,4$ nmol/L (300 ng/dL)



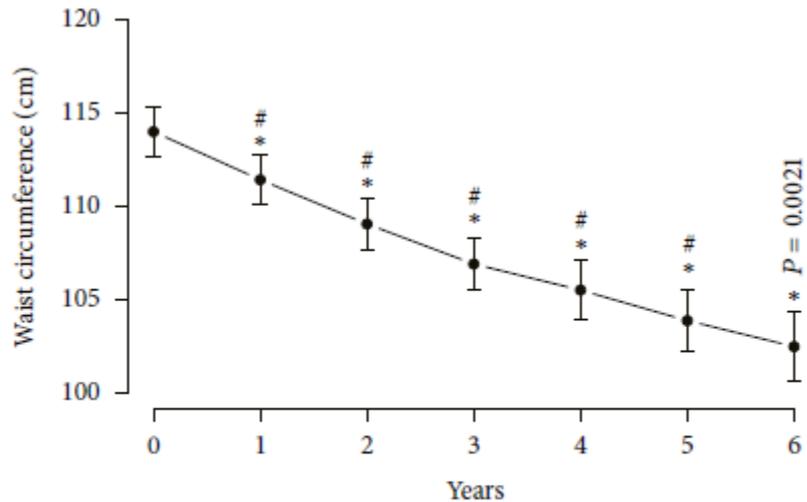
Clinical Study

Effects of Long-Term Testosterone Therapy on Patients with “Diabesity”: Results of Observational Studies of Pooled Analyses in Obese Hypogonadal Men with Type 2 Diabetes

156 patients with T2D With Low Testosterone

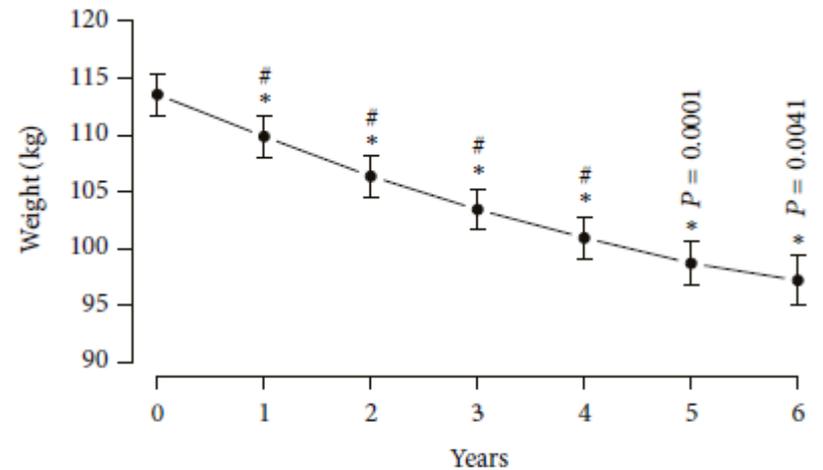
Haider A, Int. Journal of Urology , 2014

Tratamento do Hipogonadismo: Circunferência da cintura e Peso corporal



Patients, *n* 156 156 146 136 114 105 69

* $P < 0.0001$ versus baseline
$P < 0.0001$ versus previous year

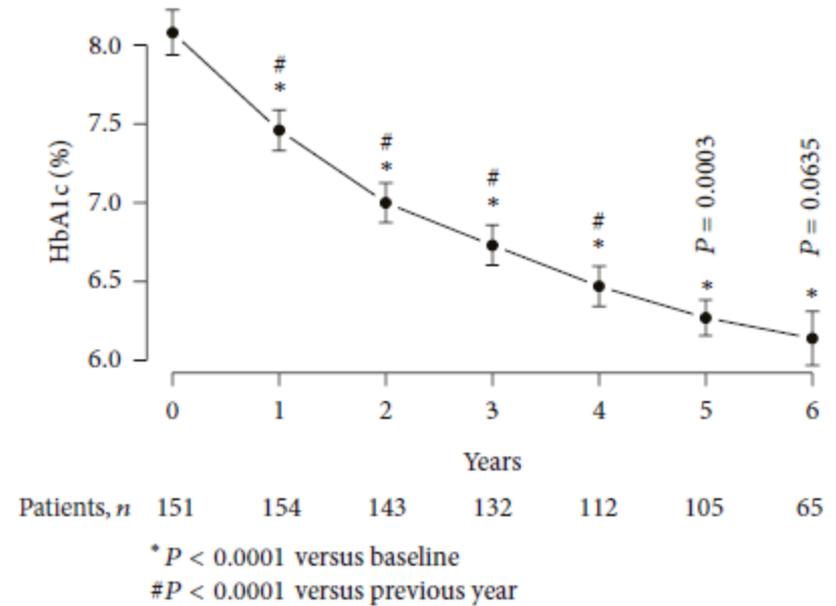
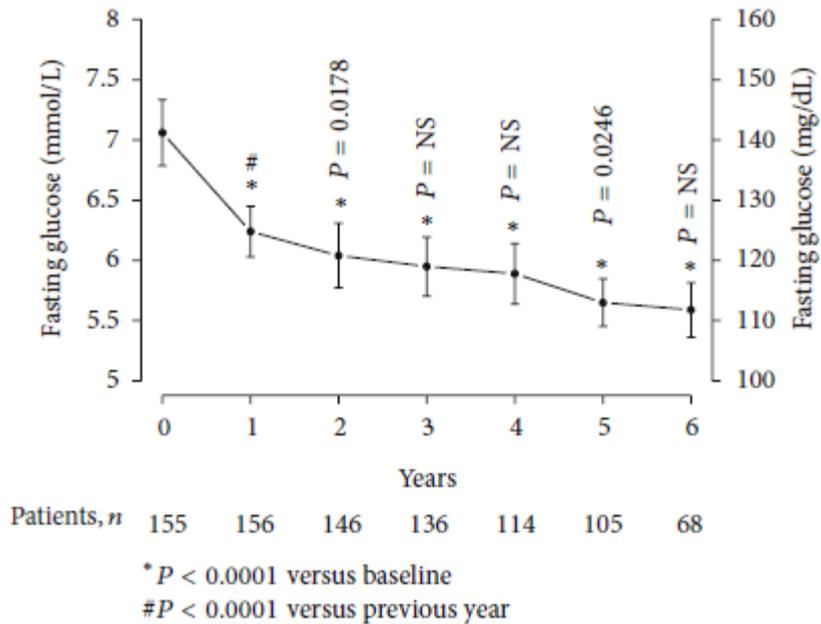


Patients, *n* 156 151 146 135 114 105 68

* $P < 0.0001$ versus baseline
$P < 0.0001$ versus previous year

Haider A, Int. Journal of Urology, 2014

Tratamento do Hipogonadismo: Glicemia de jejum e A1c



Haider A, Int. Journal of Urology, 2014

Hipogonadismo e Diabetes

Men with type 2 diabetes mellitus

2.6 In men with type 2 diabetes mellitus who have low testosterone concentrations, we recommend against testosterone therapy as a means of improving glycemic control. (1|⊕⊕OO)

Technical remark

- Testosterone therapy in hypogonadal men who have T2DM should follow the same treatment and monitoring plan as hypogonadal men without T2DM.

International Journal of
Andrology



international journal of andrology ISSN 0105-6263

ORIGINAL ARTICLE

Type 2 diabetes mellitus and testosterone: a meta-analysis study

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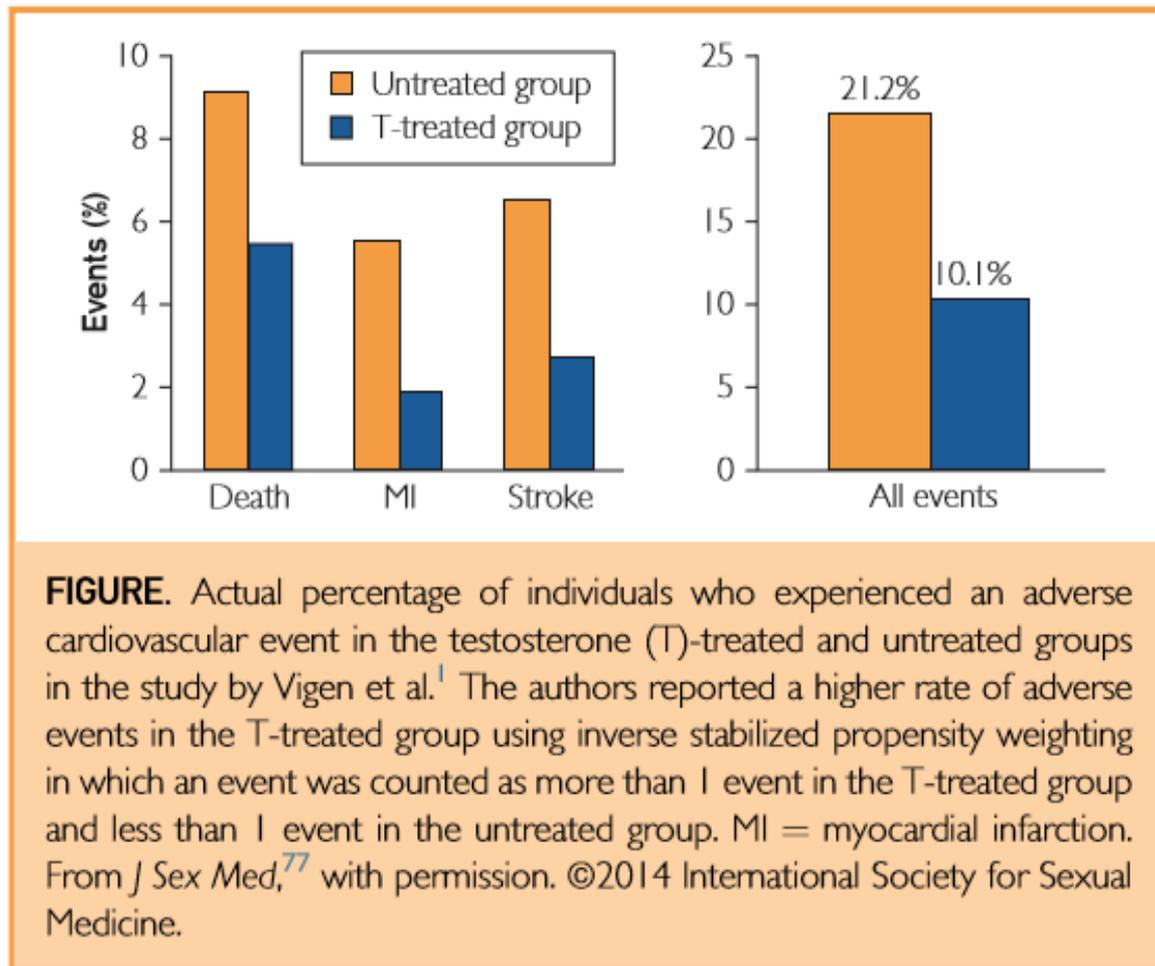
^{*}Andrology Unit and Endocrinology, Department of Clinical Physiopathology, University of Florence, Florence, [†]Diabetes Section Geriatric Unit, Department of Critical Care, University of Florence, Florence, [‡]Department of Medical Pathophysiology (DFM-Fisiopatologia Medica), Sapienza University, Rome, and [§]Endocrinology Unit, Maggiore-Bellaria Hospital, Bologna, Italy

Testosterone Therapy and Cardiovascular Risk: Advances and Controversies

Abraham Morgentaler, MD; Martin M. Miner, MD; Monica Caliber, MSc;
Andre T. Guay, MD[†]; Mohit Khera, MD; and Abdulmaged M. Traish, PhD

Abstract

Two recent studies raised new concerns regarding cardiovascular (CV) risks with testosterone (T) therapy. This article reviews those studies as well as the extensive literature on T and CV risks. A MEDLINE search was performed for the years 1940 to August 2014 using the following key words: *testosterone, androgens, human, male, cardiovascular, stroke, cerebrovascular accident, myocardial infarction, heart attack, death, and mortality*. The weight and direction of evidence was evaluated and level of evidence (LOE) assigned. Only 4 articles were identified that suggested increased CV risks with T prescriptions: 2 retrospective analyses with serious methodological limitations, 1 placebo-controlled trial with few major adverse cardiac events, and 1 meta-analysis that included questionable studies and events. In contrast, several dozen studies have reported a beneficial effect of normal T levels on CV risks and mortality. Mortality and incident coronary artery disease are inversely associated with serum T concentrations (LOE IIa), as is severity of coronary artery disease (LOE IIa). Testosterone therapy is associated with reduced obesity, fat mass, and waist circumference (LOE Ib) and also improves glycemic control (LOE IIa). Mortality was reduced with T therapy in 2 retrospective studies. Several RCTs in men with coronary artery disease or heart failure reported improved function in men who received T compared with placebo. The largest meta-analysis to date revealed no increase in CV risks in men who received T and reduced CV risk among those with metabolic disease. In summary, there is no convincing evidence of increased CV risks with T therapy. On the contrary, there appears to be a strong beneficial relationship between normal T and CV health that has not yet been widely appreciated.



Endocrine Society 2018

Testosterona e Risco CV

- Não existem RCT grandes e longos o suficiente para determinar os efeitos da reposição de TESTO sobre MACE. Os que existem são limitados pelo tamanho pequeno e curta duração
- Apesar das evidências da associação de TESTO baixa com maior risco de mortalidade CV, estes resultados podem apenas mostrar associação, mas não causalidade.
- As metanálises não mostraram associação estatisticamente significativa entre reposição de TESTO com MACE, eventos CV ou morte.
- A reposição de TESTO deve ser individualizada, para aqueles com TESTO baixa associada a sintomatologia
- Hábitos de vida saudáveis