patients. In contrast, we found increased proportions of IFG and DM patients in SRL treated when compared to non-treated patients (euglycemic: 45%, IFG: 42%, DM: 13% vs. euglycemic: 70%, IFG: 22%, DM: 8%, respectively; p=0.006). In addition, SRL treatment increased the odds ratio of IFG and DM (OR 4.7; 95%CI 2.1-10.3). When considering the degree of response to SRL pre-surgical treatment, we found that poor responders displayed at the time of surgery glycemias diagnostic of DM; whereas, good responders displayed glycemias in the range of IFG (percent change in GH levels 50±35% vs 79±22%, respectively; p<0.05).**Conclusions:** Our findings show that the proportion of patients with acromegaly undergoing surgery with glycemic levels diagnostic of DM, is modest. Interestingly, pre-treatment with SRL represents an independent risk factor for high glucose levels. Moreover, among patients on SRL pre-treatment, the ones that respond poorly are the ones that at the time of surgery display glycemias diagnostic of DM. Our findings suggest that SRL pre-treatment may predispose to worsened glucose metabolism but selectively affecting those patients in whom biochemical control is not reached.

Reproductive Endocrinology
MALE REPRODUCTIVE HEALTH - FROM HORMONES TO GAMETES

The Testosterone-To-Estradiol Ratio, Rather Than Testosterone or Estradiol Alone, Is a More Precise Marker of Metabolic-Related Outcomes in Males: Insights From a Systematic Review.

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SAT-LB8
Background: Estradiol (E2) has been shown to exert beneficial effects on males, particularly for metabolic outcomes. However, these benefits tend to be more evident when accompanied by concurrent increase in testosterone (T) levels, when the increase of E2 is secondary to the increase of T. Oppositely to its benefits in healthy males, when under metabolic and inflammatory diseases, E2 has been reported to be a marker of worse prognosis, once E2 is unproportionally high compared to testosterone in pathological conditions, which results in hypogonadism. The collective analysis of T and E2 shows that the balance between these two hormones determines whether increase in E2 levels is physiological or pathological, demonstrated by balanced T and E2, i.e., intact T:E2 ratio compared to healthy males, and
disrupted balance between T and E2, with impaired T:E2 ratio, respectivey. Hence, it seems that the dual relationship between E2 and health markers in males is based on the balance, or ratio, between T and E2. The objective of the present study is to propose a ratio between T and E2(testosterone-to-estradiol ratio, or T:E ratio) as a better predictor of health outcomes than testosterone or estradiol alone, and to differentiate health from pathological states within this single marker, from a review of the literature. **Methods:**We systematically searched for articles using the following criteria: 1. Any of the combinations of the expressions "testosterone" (AND) "estradiol" (AND) "male(s)" (OR) "men" (OR) "masculine", or "testosterone-to-estradiol" (OR) "testosterone:estradiol" (OR) "estradiol-to-testosterone ratio" (OR) "estradiol:testosterone" (AND) "male(s)" (OR) "men" (OR) "masculine", to be present in the title and/or abstract; 2. Fully written in English; 3. Performed in humans; 4. Throughout the literature until Jan 30th 202020; and 5. Original researches.**Results:**We selected 39 articles, from which 27 were performed in healthy males, and 11 under metabolic or inflammatory conditions. Benefits of E2 in healthy males occurred irrespective of T for bone mass and quality, and anger levels. Benefits that were better identified when E2 and T were evaluated together include better libido, improved cognitive functions, improved well-being and other mood states, increased muscle mass, enhanced loss of fat mass, quality, increased basal metabolic rate, increased fat oxidation, and reduced cardiovascular markers, including reduced maximal intimal-media carotids thickness, when T:E ratio was > 13.7. In pathological states, increased estradiol was associated to increased risk of disease-specific complications, and worse quality of life, particularly when T:E was < 9.5. T:E ratio was also able to accurately identify healthy athletes from those affected by any sport-related metabolic conditions.**Conclusion:**Testosterone-to-estradiol (T:E) ratio is likely a more precise predictor of metabolic-related health outcomes in both healthy and pathological states, compared to testosterone or estradiol alone.

Tumor Biology
ENDOCRINE NEOPLASIA CASE REPORTS III

Concurrent Peri-Adrenal Paraganglioma and Renal AngiomyolipomaComplicated by Toxic Multinodular Goiter

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SAT-LB305
Concurrent Periadrenal Paraganglioma And Renal Angiomyolipoma Complicated By Toxic Multinodular Goiter
Abstract: A 40 years old woman presented with headache, palpitation and diaphoresis by the past 3 months, and then developed progressive dyspnea on exertion and chest pain 2 weeks ago. She also lost 5 kg of her body weight during the past 6 months. She ever had multinodular goiter and lobectomy was done 12 years ago, after that she lost to follow up. At meantime, toxic multinodular goiter was suspected and high level of free T_4, T_3, and suppressed thyrotropin were demonstrated. Furthermore, thyroid scan revealed heterogenous tracer uptake at her thyroid bed. Methimazole was started, however her blood pressure and heart rate were all uncontrolled. Pheochromocytoma was suspected and markedly elevated of both urinary normetanephrine and metanephrine were confirmed. Computed tomogram revealed a huge, right supra-renal mass. In addition, hypodensity mass were found at upper pole of right kidney, and the results of ^{131}I-Metaiodobenzylguanidine