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Press Release

Metabolic Syndrome and Erection Problems

In Naples, an international symposium investigates the relationship between erectile dysfunction and cardiovascular disorders

Naples, 19 June 2015 – Abdominal obesity, high blood glucose and cholesterol levels, hypertension, cardiovascular problems: these are the characteristics of metabolic syndrome, a frequently-occurring condition in Italian males. To what degree can metabolic syndrome favour onset of prostate and bladder problems and even erectile dysfunction? **The answers to the questions may come from the urologists, cardiologists and endocrinologists meeting at the ‘Keeping Men Healthy: Let's Assemble the Puzzle’ International Symposium, scheduled for 19 and 20 June in Naples. The symposium is organised by the Department of Pharmacology and the Department of Urology of the University of Naples Federico II and is promoted by the Fondazione Internazionale Menarini.**

‘In recent years, the discovery of new medicinal products which can efficaciously treat erectile dysfunction has led to a better understanding of the mechanisms responsible for erection. **This progress in research is not limited to sexual disorders: it has also aided greatly in development of new molecules for treating other disorders and diseases,**’ explains **Vincenzo Mirone, Professor of Urology at the University of Naples Federico II and Co-Chairman of the Symposium.** ‘What’s more, erectile dysfunction can be both a symptom and a complication of severe chronic illnesses – and cardiovascular diseases in particular.’ Various studies have demonstrated a connection between metabolic syndrome and erectile dysfunction and various researchers have hypothesised that metabolic syndrome can favour the onset of benign prostatic hyperplasia and urinary tract disorders.

‘Common bases for onset of erectile dysfunction and urinary tract disorders could be the reduction in the body’s capacity to synthesise nitric oxide which occurs with aging, increase in hypertension, obesity and insulin levels and reduction of blood flow in the bladder, the prostate and the penis due to pelvic arteriosclerosis,’ adds Giuseppe Cirino, Professor of Pharmacology at the University of Naples Federico II di Napoli and Co-Chairman of the Symposium.

‘In detail, nitric oxide is the mediator on which the activity of many medicinal products used in cardiovascular medicine is based; among these, the nitro derivatives such as nitroglycerin are probably the best known and those in most widespread use.’

The Symposium is also celebrating the return to Naples of Louis Ignarro, the U.S. biochemist, now at the UCLA School of Medicine, who about thirty years ago discovered that nitric oxide plays a role as cellular mediator in human physiology. Ignarro, whose father was from Torre del Greco, was awarded the 1998 Nobel Prize for Medicine for his discovery. Today, the researcher is in Naples to share his progress and results to date with his Italian and international colleagues.

‘Today, nitric oxide finds many applications in fields different from cardiovascular medicine. It plays an important role in maintaining balances not only in the blood vessels but also in the peripheral nervous system, where it is the principal neurotransmitter of the neurons which innervate smooth muscle tissues – including those which regulate erectile function,’ Ignarro reminds us.

Nitric oxide synthesis is stimulated by various factors, one of which is the so-called ‘shear stress’, a parameter which measures the force exerted by blood flow on the walls of the vessels. ‘When arterial blood pressure increases inordinately, the body defends itself by synthesising nitric oxide, which dilates the vessel walls and contributes to lowering blood pressure,’ Cirino adds. ‘Contrariwise, if synthesis of nitric oxide is inhibited, we have an increase in peripheral resistances and, consequently, an increase in arterial blood pressure.’

It was by exploiting this mechanism that researchers were able to put to use the effects of nitric oxide on the circulatory system to create medicinal products for combating erectile dysfunction.

Another central theme at the symposium is testosterone levels, reduction of which can determine a reduction in sexual desire and can also cause erectile dysfunction as well as general malaise, depression, anxiety and attention deficit.

‘In males, production of testosterone by the testicles decreases slowly and progressively as the physiological aging process progresses, by about one per cent per year after age 50,’ remarks Mirone. ‘Testosterone contributes to general physical wellbeing in the adult male: it has in fact been shown that physiological testosterone levels ensure optimal cholesterol levels, inducing decreases in total cholesterol and in “bad” cholesterol (LDL). Reduction of circulating testosterone levels is instead responsible, in the male, for increased risk of coronary disease, obesity and insulin resistance, while normal testosterone levels can have beneficial effects on the cardiovascular system. Testosterone also acts synergically to increase the effectiveness of the medicinal products which act on erection; this explains why low testosterone levels can attenuate the therapeutic response to the currently-available medicinal products,’ Mirone concludes.

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