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Press Release

Kidney Problems as Possible Signs of Cardiovascular Risk

Even a small quantity of albumin in urine can help individuate subjects suffering from hypertension and other possible complications

Genoa, 19 May 2016 – Albumin and uric acid: two substances that can be warning signals for arterial hypertension and cardiovascular problems. ‘Albumin is a protein which is fundamental for our body and under normal circumstances it circulates in great quantity in the blood,’ explains Roberto Pontremoli, Professor of Internal Medicine at Department of Internal Medicine of the University of Genoa. ‘Albumin acts as a carrier for other molecules – for example, hormones or medicinal products – and helps them to more easily reach the body’s various organs and tissues. Additionally, albumin plays an “osmotic” role; that is, it can attract such liquids as blood plasma and hold them in the blood vessels. The presence of small quantities of albumin in urine (microalbuminuria) is, instead, an alarm, signalling possible renal as well as cardiovascular disorders. If the kidney allows albumin to pass into the urine, it is a sign that something is not right,’ continues Pontremoli. This is one of the themes of the ‘The Kidney, Hypertension and Cardiovascular Risk’ meeting in Genoa from 19 to 21 May, chaired by Dr. Pontremoli and organised by the University of Genoa and the IRCCS A.O.U. San Martino-IST university hospital

institute for treatment and research of Genoa and promoted by the Fondazione Internazionale Menarini.

‘Arterial hypertension and diabetes mellitus are the two most common chronic conditions in Western countries: in Italy, they affect 30% and 6-8% of the population, respectively. High blood pressure and diabetes are the principal risk factors for development and progression of chronic kidney disease, which has also increased dramatically in recent years,’ adds Pontremoli. ‘Chronic kidney disease is often totally asymptomatic and currently affects about 10% of the population; in and of itself, it significantly increases the risk of cerebro- or cardiovascular accidents, which represent – directly or indirectly – an important cost item in the budgets of the health and social care systems of industrialised countries.’

The meeting will examine the major novelties concerning the role of variations in albuminuria in relation to antihypertensive treatment goals. Also on the agenda is presentation of the results of the studies conducted by the researchers of the Centre for Hypertension of the IRCCS A.O.U. San Martino-IST, which demonstrate how identification of alterations in renal function – even when they are of slight entity and asymptomatic – such as microalbuminuria or a small drop in the rate of glomerular filtration – is sufficient to permit easy, low-cost individuation of hypertensive patients with the highest risks of developing complications. ‘The fallout from these new acquisitions could prove to be extremely important both for clinical practice and diagnostics, in terms of simplifying evaluation of cardiovascular risk in at-risk patients such as diabetics and/or hypertensive subjects, and of treatment, by offering the physician a new and novel tool (measurement of variations in albuminuria) for verifying the efficacy of antihypertensive or antidiabetic therapy regimes over time,’ Pontremoli points out. ‘In consideration of these facts and due to the progressive increase in the average life expectancy of our population, prevention of cardiovascular and kidney diseases has become a public health priority since, today, **diagnosis and treatment** of these conditions entail major outlays by the public healthcare systems, in Italy as in other countries. It is not

unlikely that such disciplines as cardiology and nephrology will, in the future, be more closely correlated and also more closely correlated with general medicine – not only in strictly medical-scientific terms but also as regards clinical and social services. This is one of the reasons why educational and training events such as this meeting in Genoa attract growing interest, in a period when rationalisation of economic resources is of crucial importance for the health and social care system. The clear physiopathological relationship between the kidney and the cardiovascular system is in fact the premise – and the rationale – for an integrated approach to prevention, diagnosis and treatment of cardiorenal complications.’

The Genoa meeting will also address another cardiovascular and renal risk factor: uric acid. For decades, researchers have hypothesised a link between hyperuricemia and cardiovascular disease. For higher primates, uric acid represented an evolutionary advantage due to its antioxidant action and its effects on arterial blood pressure, innate immunity and energy reserves. The evolutionary imperative for primates to silence their uricase gene must have been strong and it guaranteed high levels of uric acid in humans. The human health consequences, both positive and negative, were significant. ‘Nevertheless, from the point of view of modern medicine, hyperuricemia is undesirable,’ warns Pontremoli. ‘It would seem that something has “gone wrong” in modern society, where the uric acid average values have increased over the last 50 years and have almost doubled in the male population. Recent ‘revisitations’ of the physiopathology of hyperuricemia and of the pro-oxidising and inflammatory action of uric acid have made it possible to define a close link between uric acid levels and the presence or development of arterial hypertension, early kidney damage, metabolic syndrome, diabetes, endothelial dysfunction, heart organ damage (left ventricular hypertrophy) and extra-cardiac organ damage,’ conclude Pontremoli.

The meeting can thus make an important contribution by providing updates for physicians and researchers in the field of kidney, cardiovascular and metabolic diseases. Publication and communication of the most recent scientific acquisitions

in these areas of study are important tools for improving the quality of healthcare and for promoting and incentivising scientific research.

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