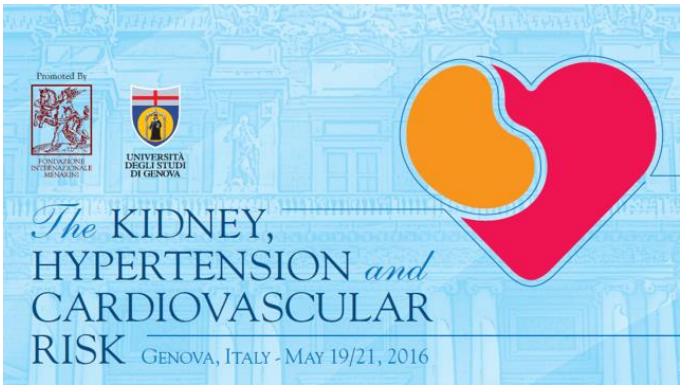
The KIDNEYS, HIGH BLOOD PRESSURE and CARDIOVASCULAR RISK

Genoa (IT), May 19th – 21st, 2016

Highlights

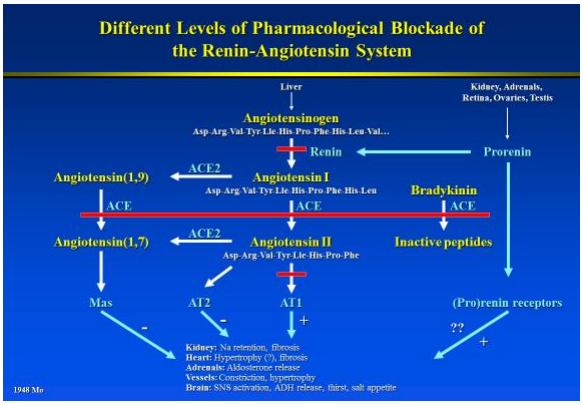
Introduction!



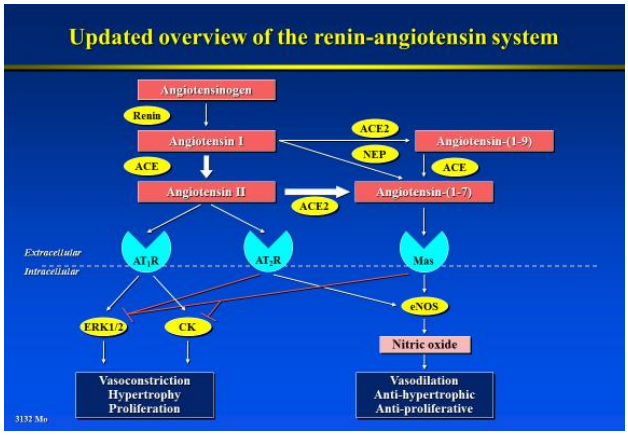
Prof. Pontremoli, Chairman of the convention, opened the congress by presenting the main topics to be addressed and thanked all the participants, in particular those coming from other continents such as America and the Philippines. The symposium dealt with some of the main issues linked to cardiovascular risk and its connections with kidney failure and high blood pressure. The lectures were given by the most highly reputed researchers and opinion leaders in this sector.

To follow the presentations of this convention just click on this link: http://www.fondazione-menarini.it/Archivio-Eventi/The-Kidney-Hypertension-and-Cardiovascular-Risk/Materiale-Multimediale … and after logging in, access the multimedia material.

The renin-angiotensin-aldosterone system, high blood pressure and cardiovascular risk: at what point are we?



In the opening talk of the conference, Prof. Morganti from Milan addressed this topic starting from the history of the discovery of the RAAS that occurred in the '80s. He stressed how pharmacological treatment based on ACE-inhibitors and angiotensin-II inhibitors gives rise, as an epiphenomenon, to a reactive increase in the plasmatic levels of renin that relates to an increase in the remodelling phenomena and cardiovascular events. The speaker presented data on patients characterised by the presence of a particular genotypic expression defined as PRR. The renin-angiotensin system today has new actors such as angiotensina 1-9 and angiotensin 1-7. The latter is studied as a target molecule of new drugs that are specific for cardiovascular diseases. He then dedicated the last part of his talk to present data regarding the forms of primary hyperaldosteronism and its links with obesity and high blood pressure.



- What is the role of angio I, angio II and renin in the remodelling phenomena?
- Which diseases are linked to the presence of the PRR genotypic expression? What is the role of angiotensin 1-7?
- What is the link between obesity, hyperaldosteronism and high blood pressure?
- Is it possible to treat high blood pressure with the aldosterone antagonists in diabetic patients?

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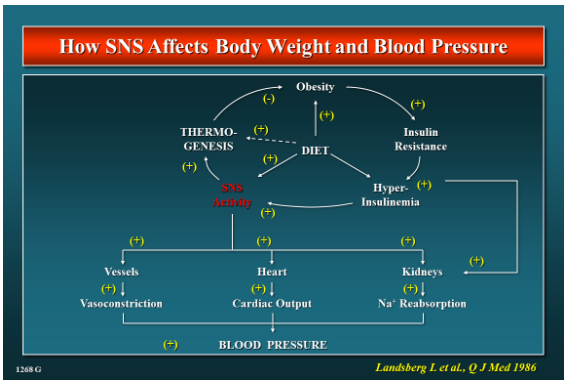
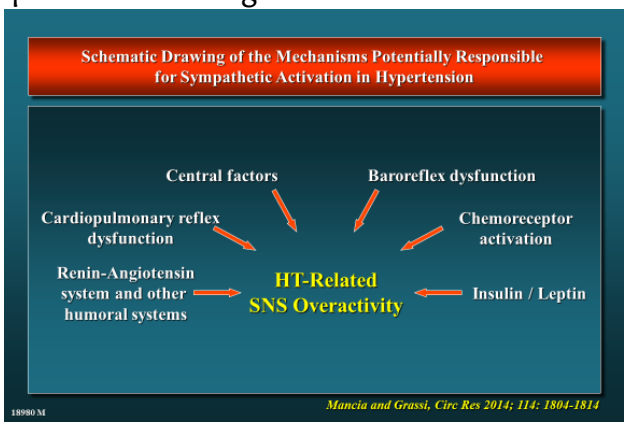
Activation of the sympathetic nervous system at the centre of cardiovascular disease



Prof. Grassi from Milan presented data on the correlation between the sympathetic nervous system (SNS), high blood pressure, and chronic renal failure. The activation of the SNS is the *primum movens* in the determinism of diseases such as diabetes, kidney disease, high blood pressure and obesity; its action also involves the automatic regulation of the neuro-immune system. The plasmatic levels of norepinephrine can also rise in the presence of deregulation of the SNS and this condition gives rise to a significant increase in the prevalence of high blood pressure. The pronounced activation of the SNS shows a close relationship with the worsening of the evolution of disease in patients suffering from heart failure, renal failure and ictus. The last part of his talk was dedicated to the treatment of patients suffering from chronic renal failure in whom there is a condition of hyper-activation of the SNS. The speaker also presented data on pharmacological treatment as well as invasive treatment.



- What are the main mechanisms potentially responsible for the activation of the SNS in the presence of high blood pressure?
- What are the effects of auto-regulation of the neuro-immune circuit in patients with cardiovascular disease?
- What are the main adverse events caused by the activation of the SNS?
- What are the drugs that reduce the activation condition of the SNS in patients suffering from chronic renal failure?

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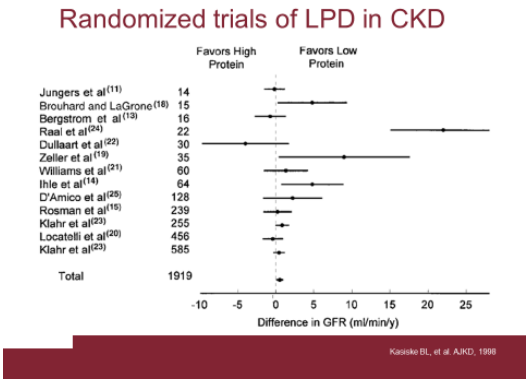
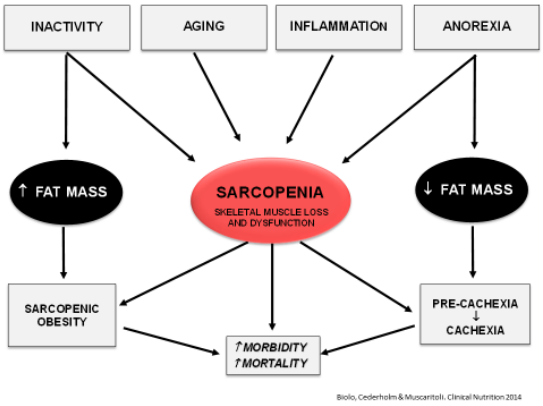
Diet in patients suffering from chronic renal failure: risks and benefits



Prof. Muscaritoli from Rome addressed this topic starting from Brenner's theory of the residual nephrone based on which the ideal diet in patients with severe kidney function deficiency should be characterised by a decidedly low level of proteins. In the aim of demonstrating the clinical effectiveness of this theory, a whole series of studies have been conducted and the results of which have been substantially disappointing. The protein restriction risks exacerbating the nutritional condition of nephropathic patients, which in fact then gives rise to a condition of *protein energy wasting*. The effects of protein restriction are amplified during chronic diseases such as chronic renal failure, due to the underlying pro-inflammatory states. These patients have a high risk of developing a condition known as sarcopenia which in turn significantly worsens the metabolic functions and as a result, the kidney disease itself. These data mean the physician is faced with a dilemma: whether to continue treating nephropathic patients with low-protein diets in order to protect the kidney function, or whether to modify the diet by increasing the concentration of proteins in order to avoid the onset of sarcopenic-type phenomena?



- Is protein restriction really effective in slowing down the evolution of kidney failure?
- What does protein energy wasting mean?
- Why is there a pronounced condition of anorexia in the nephropathic patient?
- What is the effect of a low-protein diet on the intestinal microbiota?
- What are the recommended protein levels contained in the diet of patients suffering from renal failure?
- What is the strategy that the speaker suggests in applying the best possible management of these patients?

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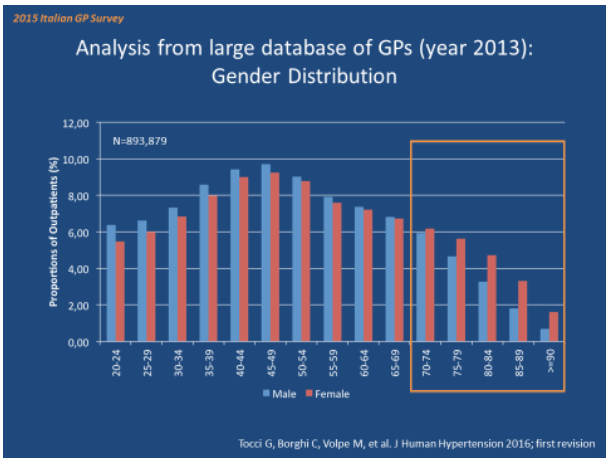
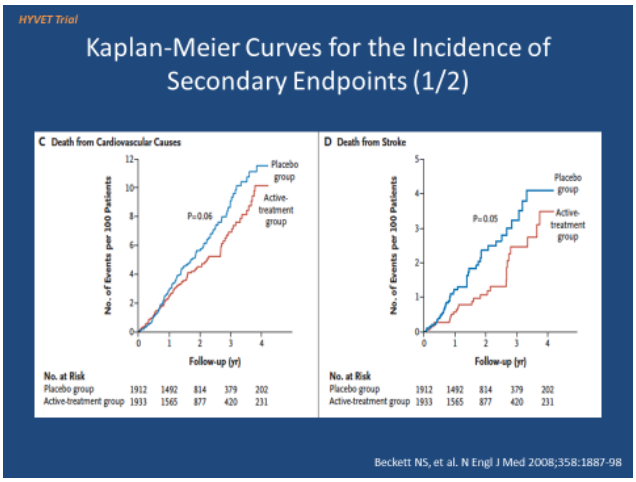
High blood pressure in the elderly patient and the need to redefine the treatment strategies



Prof. Tocci from Rome addressed the issue of controlling blood pressure in elderly patients. High blood pressure in elderly patients has reached levels with a prevalence exceeding 60% and its management is more complex due to the comorbidities that are also often present. The guidelines include different recommendations for elderly patients with high blood pressure who are in fragile conditions compared to those who are substantially healthy. In the former it is a good idea to achieve systolic pressure levels between 140 and 150 mmHg, while in the latter, target pressure levels < 140 mmHg can be achieved. In therapeutic terms, the speaker stressed the importance of treating these patients not only with calcium antagonists and diuretics but also with inhibitors of the renin-angiotensin system, such as ACE inhibitors and angiotensin II-receptor inhibitors, preferably in pre-constituted combination, in order to increase the patient's compliance to the treatment.



- What are the prevalent data of high blood pressure in the Italian population of over 80-year-olds?
- What are the factors, in addition to the blood pressure values, that influence the prognosis in patients with high blood pressure?
- What advantages in terms of reduction of the events are achieved with optimal control of blood pressure in elderly patients?

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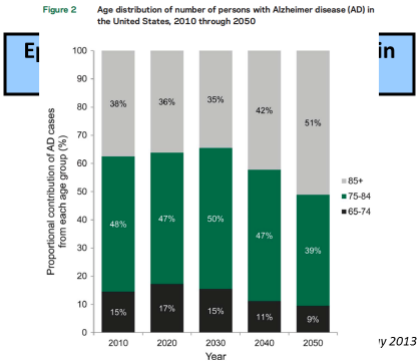
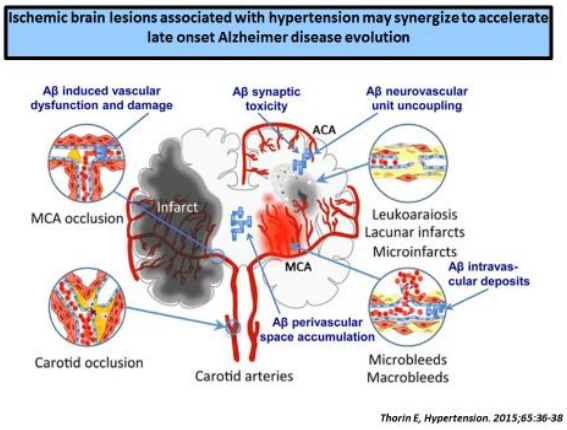
High blood pressure and cognitive deficiency in the elderly patient



Prof. Bellelli from Milan addressed this extremely current topic, in view of the ageing of the population on a global level. The studies conducted on elderly populations have given contrasting results about the correlation between high blood pressure and dementia. The treatment for hypertension in patients suffering from dementia may exacerbate the condition of cognitive deficiency/dementia especially in the case of aggressive pharmacological treatments that give rise to a significant reduction in blood pressure at night. On the other hand, recent data published in the journal JAMA show how elderly subjects with high blood pressure under pharmacological treatment show a significant slowing down of the evolution of cognitive deficiency compared to patients with high blood pressure who are not treated. From this and other similar studies it is evident that systolic and not diastolic blood pressure, is correlated in a significant manner with the onset of cognitive deficiency in hypertensive patients. The speaker concluded his talk by stating how treatment of high blood pressure is able to slow down the evolution of cognitive deficiency. Nevertheless, especially in elderly patients with evident signs of fragility, if not sufficiently balanced, the same treatment may on the other hand worsen the cognitive state of these patients and accelerate the onset of dementia.



- Does it make sense to treat high blood pressure to reduce cognitive deficiency?
- What type of dementia is present in patients with high blood pressure?
- What is the effect of pharmacological treatment for high blood pressure on the onset of signs of cognitive deficiency?
- What correlation exists between blood pressure variability and cognitive deficiency?
- What correlation exists between blood pressure and the plasmatic levels of β-amyloid?

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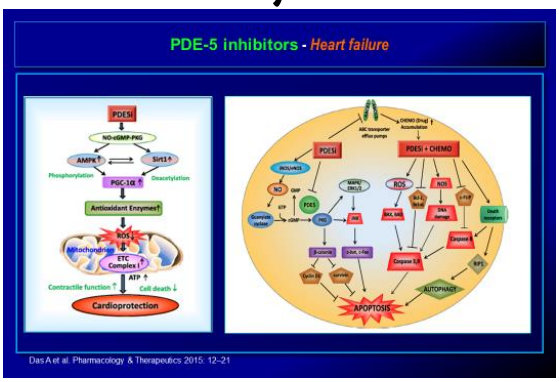
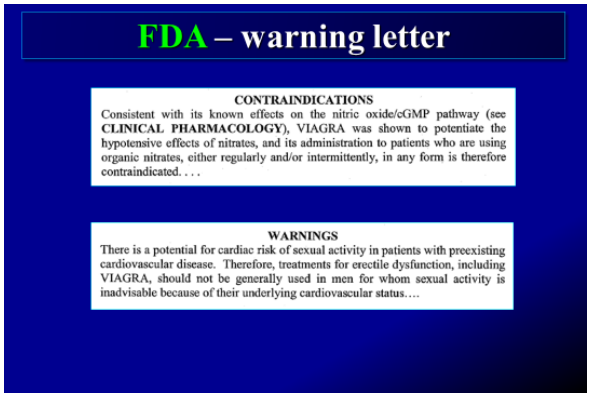
Phosphodiesterase type 5 inhibitors in patients with cardiorenal syndrome



Prof. Ferri from L'Aquila presented recent data on the use of phosphodiesterase type 5 inhibitors in patients suffering from the cardiorenal syndrome. The physiopathological conditions are extremely interesting and the results of the studies conducted on patients suffering from heart failure with pulmonary hypertension are also exceedingly encouraging. Nonetheless, after conducting additional analyses it is evident that in subjects with heart failure but no pulmonary hypertension, the effectiveness and safety data do not show any apparent benefits. The conditions that indicate contraindications for the use of these drugs are hypertrophic cardiomyopathy and the administration of nitrates. In the elderly population, there are insufficient publications and as a result, too little evidence is available.



- What are the data relating to hospitalisation of patients suffering from heart failure in Italy?
- What are the pharmacological treatments recommended by the guidelines published in 2013 for patients suffering from the cardiorenal syndrome?
- What is the effect of Nebivolol on the synthesis of nitrogen oxide in patients suffering from the cardiorenal syndrome?

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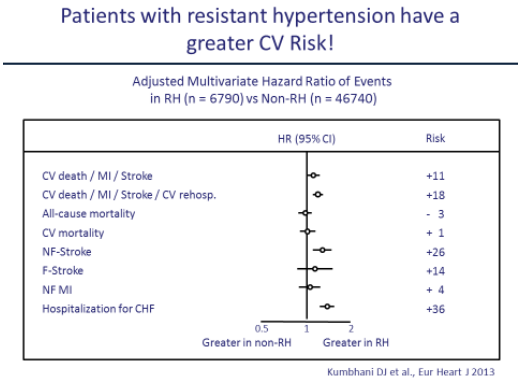
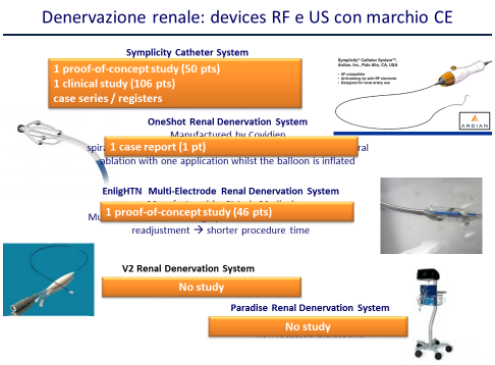
How to treat resistant high blood pressure?



Prof. Taddei from Pisa addressed this topic relating to the treatment of resistant high blood pressure. The guidelines define this situation as a pathological condition that calls for additional diagnostic investigation and not as an incurable disease. These patients take from three to four drugs without any apparent benefits in terms of a reduction and/or control of their blood pressure values. The problem lies in understanding whether we are faced with really resistant hypertension or with forms that can be defined as pseudo resistant, such as poor patient compliance with the therapy, an inappropriate lifestyle, or the presence of systemic pathologies that in turn give rise to a state of plasmatic hypervolemia. After addressing these points the speaker concluded that we can effectively speak about resistant high blood pressure in cases in which, after having ruled out the aforementioned causes, in addition to failure to control blood pressure following the administration of at least three adequately-dosed drugs, an anti-aldosterone agent has also been tried but without success. He then dedicated the last part of his talk to the presentation of data regarding renal denervation as the ultimate therapeutic therapy that could be applied in case of resistant high blood pressure.



- What are the conditions defined by the so-called state of pseudo-resistant high blood pressure?
- What weight does the “white coat” effect have on the correct diagnosis of high blood pressure that is resistant to treatment?
- What are the main therapeutic aids that can be applied?
- Is renal denervation an effective and decisive solution?

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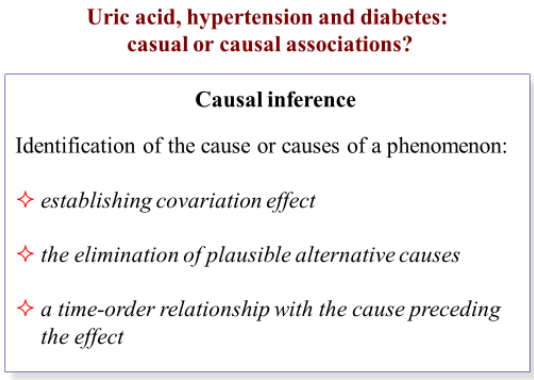
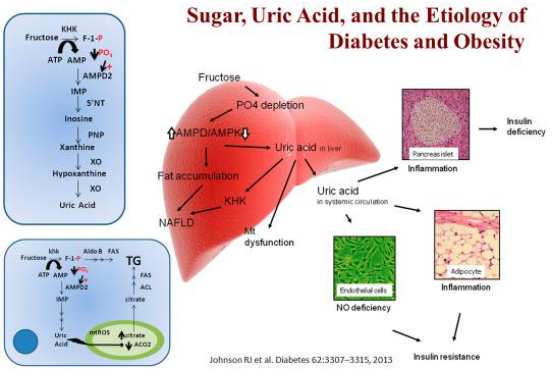
Uric acid, high blood pressure and diabetes: a casual combination or is there a precise causality relationship?



Prof. Desideri from L'Aquila presented data on this combination, defining it as anything but casual. In fact, hyperuricaemia is not just the effect but also the cause of high blood pressure and carbohydrate de-metabolism. Hyperuricaemia, high blood pressure and diabetes are linked by a covariance relationship and this correlation is present above all in females aged < 50. In physiopathological terms, this correlation seems to be present at the end of intrauterine life as well. The increase in the plasmatic levels of uric acid gives rise to vascular lesions which are not counterbalanced by the simple reduction of blood pressure. It is therefore necessary to intervene with therapeutic solutions capable of correcting the underlying metabolic alteration. In the last part of his talk, the speaker presented data on the correlation between the prevalence of high blood pressure, cardiovascular disease and the plasmatic levels of uric acid in patients treated with xanthine oxidase inhibitors.



- What correlation exists between uric acid, blood pressure and cardiovascular risk in children?
- How much does the risk of type 2 diabetes increase in hyperuricaemic patients?
- What is the physiopathological mechanism at the basis of high blood pressure in hyperuricaemic subjects?
- What are the levels of uricaemia above which the cardiovascular risk increases significantly?

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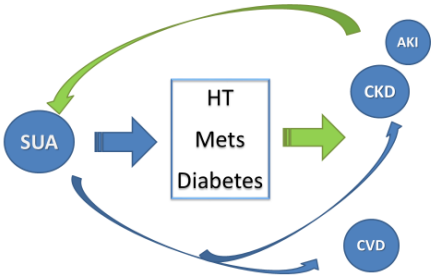
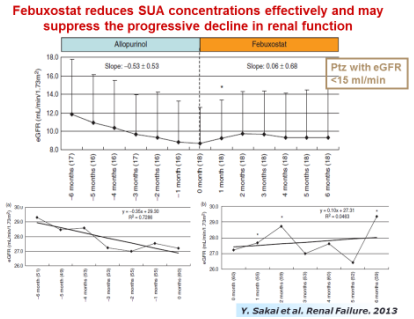
Uric acid and kidney damage



Prof. Viazzi from Genoa presented recent data on the correlation between uric acid and kidney damage, both with regard to the vascular aspects and the structural organic aspects, such as tubules and glomerules. In studies on renal tubular cells, the presence of high levels of uric acid determines the reduction in the cell vitality and increases the apoptosis phenomena. She explained that the final proof of the correlation between uric acid and kidney damage was obtained from studies conducted on hypo-uricaemising drugs such as allopurinol and febuxostat. The latter in particular, has reduced the plasmatic levels of uric acid in patients with glomerular filtrate < 15 ml/min, blocking the progressive decline of the kidney function.



- What are the pathological conditions that correlate with the plasmatic levels of uric acid?
- What is the prediction level of hyperuricaemia in the evaluation of the outcome in kidney transplant patients?
- What is the level of risk in hyperuricaemic patients of developing of situations of kidney disease?
- How predictive is hyperuricaemia of acute kidney damage in patients undergoing a coronary bypass?

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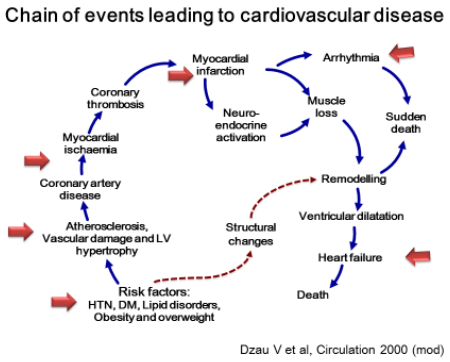
Asymptomatic hyperuricaemia and cardiovascular disease: is it time to take action?



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Prof. Borghi from Bologna addressed this topic starting from the physiopathological mechanisms that link hyperuricaemia, also asymptomatic, to the onset of cardiovascular disease. Hyperuricaemic subjects have an elevated risk of developing high blood pressure over the course of the years. The reduction in the levels of uric acid right from adolescence contributes to a significant lowering of blood pressure. In addition, uric acid is a risk factor not only for high blood pressure, but also for the metabolic syndrome and target organ damage. The impact of uricaemia on target organ damage manifests at a systemic level on the heart, kidneys, and more generally, on the various vascular regions. This phenomenon gives rise to an increase in cardiovascular events, also in the presence of levels of uric acid lower than those considered outside the norm. In the last part of his talk, the speaker presented data on pharmacological treatment of patients with heart failure and hyperuricaemia, and also on the effects of therapy on the incidence of cardiovascular events.

Febuxostat: RCT with CV outcome

Trial	Drug	1° objective	Reference
BP control	Febuxostat vs. Allopurinol	Clinic and ABPM	NCT01701622*
Coronary endothelial dysfunction	Febuxostat vs. Placebo	Coronary flow	NCT01763996*
BP control	Febuxostat vs. Placebo	ABPM	NCT01496469*
Exercise tolerance in chronic angina	Febuxostat vs.Placebo	Exercise test (ETT)	NCT01549977*
Vascular structure and function FORWARD Study	Febuxostat vs. Allopurinol	Carotido-Femoral PWV	EUDRACT2014-*5567-33
Major CV disease-FREED Study	Febuxostat vs. Placebo	MACE	NCT01984749*

*ClinicalTrial.gov

- What is the chain of events linking hyperuricaemia to cardiovascular disease?
- What is the range of normality of uric acid?
- How long does it take for high blood pressure to develop in the presence of hyperuricaemia?
- What is the correlation between hyperuricaemia and diabetes?
- At what levels of uricaemia can the signs and symptoms of cardiovascular events increase?

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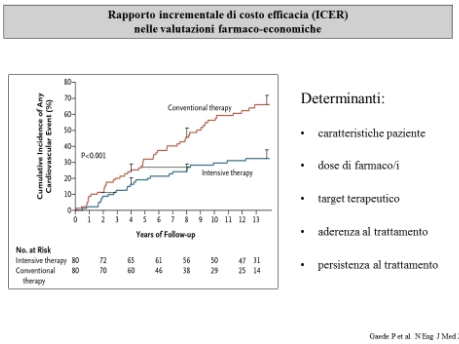
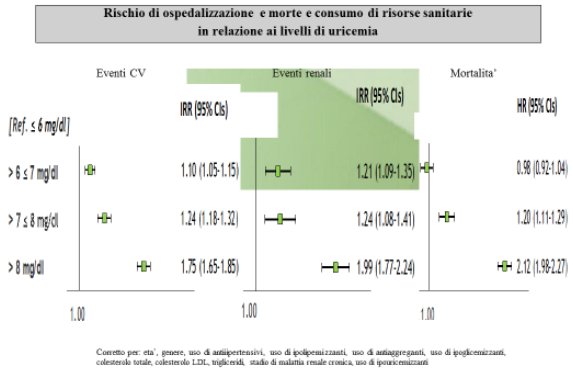
Uric acid as a treatment target in pharmacoeconomic terms



Prof. Degli Esposti gave his talk starting from the concept of pharmacoeconomics. The limited resources available imply the need to set criteria for choosing alternative solutions that contribute to the increase in said resources: pharmacoeconomics is the science that allows us to set these criteria. The speaker then presented data based on the assessment of the knowledge of uricaemia in clinical practice, on the evaluation of the risk of hospitalisation and death in relation to the levels of uricaemia, on the definition of the consumption of health resources relating to the levels of uricaemia, and on the assessment of hypo-uricaemising treatment in clinical practice using the data collected in the administrative archives and clinics of 3 ASLs (health departments) since 2009 in the entire population in the territory. The speaker concluded his talk by emphasising the need to continue monitoring the consumption of resources in order to enhance the allocation of the same that would give rise to an improvement of the benefits in terms of health services for the population.



- What is the hierarchy of the parameters for assessing a pharmaceutical product in an economic perspective?
- What is meant by the incremental cost/benefit ratio?
- How much weight does the GDP have per capita on the assessment of the acceptability of the cost/benefit ratio?
- What are the levels of the consumption of health resources in relation to the levels of uricaemia?
- What is the percentage of compliance with the treatment in relation to the levels of uricaemia emerging from the study conducted in the 3 ASLs?

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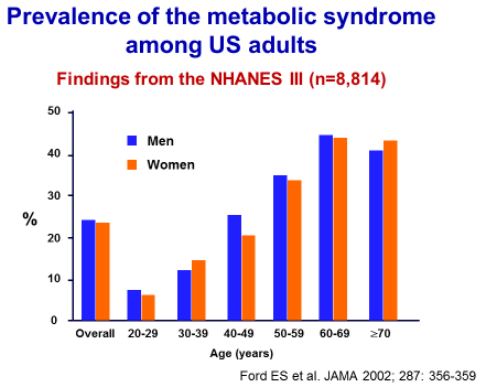
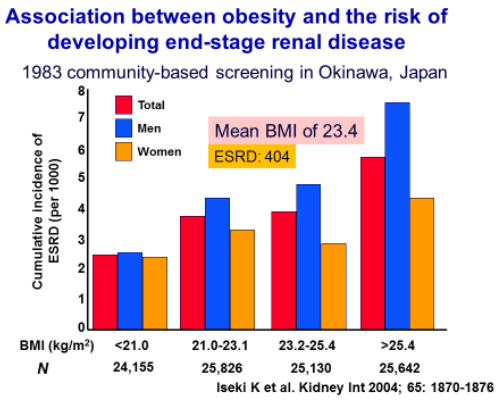
The metabolic syndrome, obesity and cardiovascular risk



Prof. Del Vecchio spoke about the correlation between metabolic syndrome, obesity and cardiovascular risk. The metabolic syndrome is characterised by the presence of at least three of the following diseases: abdominal obesity, hyperglyceridaemia, low HDL levels, high blood pressure and hyperglycaemia. The main risk factors include obesity, advanced age, physical inactivity, smoking, postmenopausal status, high carbohydrate diet, consumption of alcohol and genetic predisposition. The metabolic syndrome is a particularly frequent pathological condition in countries with high living standards. Its main comorbidities include type 2 diabetes, cardiovascular disease and chronic renal failure. The association between metabolic syndrome and chronic renal failure has been detected in various epidemiological studies and its prevalence grows in proportion to the number of pathological conditions that are present which form part of this syndrome. On the other hand, both the metabolic syndrome and obesity, when taken single, are independent risk factors for chronic renal failure.



- What is the correlation between adipokines and chronic kidney disease?
- What is the level of correlation between obesity and the risk of developing end-stage renal disease?
- Is insulin-resistance the factor that gives rise to the worsening of the kidney function while the metabolic syndrome is in progress?
- What is the relationship between obesity and glomerulopathy?

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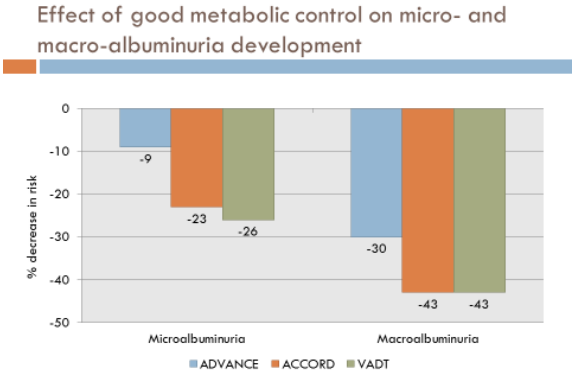
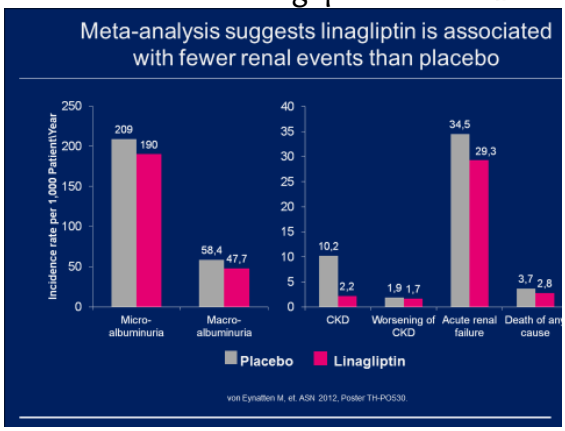
Hypoglycaemic treatment in diabetic patients with chronic kidney disease



Prof. Trevisan from Bergamo addressed this topic based on the close relationship between glycaemia and micro/macroalbuminuria. The hypoglycaemising treatment slows down the evolution of this kidney disease but at the same time exposes the nephropathic patient to the risk of hypoglycaemia, which in turn may also indicate a loss of patient compliance with the treatment. The traditional hypoglycaemising drugs, such as the sulphonylureas and insulin, are metabolised by the kidneys and this factor limits their use. In addition, there are no specific guidelines for the treatment of diabetics with advanced renal failure. As far as the new pharmaceutical products are concerned, the speaker presented data on the administration of the gliptins and GLP1 receptor antagonists. Despite the lack of data, the use of the latter seems to have positive effects: not only do they help improve metabolic control, but they do not cause any weight gain and reduce blood pressure. The speaker concluded his talk by underscoring that the administration of the gliptins or GLP1 receptor antagonists in association with Metformin (when possible) and with insulin, helps achieve good metabolic control in diabetic patients with reduced kidney function.



- What are the characteristics of the ideal hypoglycaemising drug for diabetic patients with chronic kidney disease?
- What are the recommendations of the guidelines for the hypoglycaemising treatment in patients also suffering from chronic kidney disease?
- What data in literature relate to the use of Linagliptin in these types of patients?

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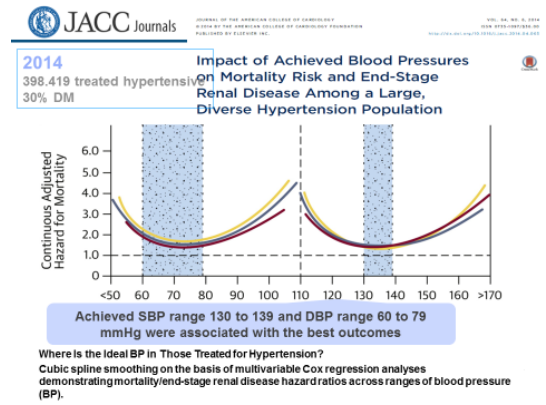
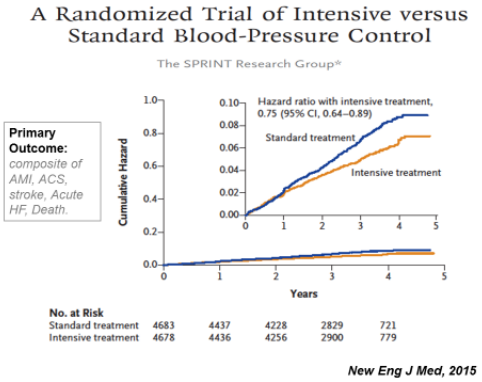
Anti-hypertensive treatment in patients suffering from chronic kidney disease



Prof. Pontremoli from Genoa, Chairman of the Convention, addressed this topic of primary importance in view of the evolution towards end-stage renal disease typical of hypertensive patients and more particularly, those also suffering from type 2 diabetes. The presence of albuminuria certainly also exacerbates the prognosis. Nevertheless, they also progress towards the state of end-stage renal disease in the absence of micro or macro albuminuria. The main issues discussed by the speaker included the identification of the blood pressure targets to be reached in patients with chronic kidney disease and the relationship between renin-angiotensin-aldosterone inhibitors and kidney protection. As far as the first point is concerned, the speaker pointed out how the lowering of blood pressure reduces albuminuria but not always is this fact correlated with a reduction in the incidence of end-stage renal disease. The administration of a combination of ACE inhibitors and angiotensin II blockers in all the comparative clinical studies, including register studies, only worsened the prognosis of patients with chronic kidney disease in terms of outcome. The speaker concluded his talk by stating how it is necessary to further improve the therapeutic protocols in order to improve the outcome of these patients.



- What are the target blood pressure levels to be reached in hypertensive nephropathic patients suffering from type 2 diabetes?
- What is the impact of reaching the target blood pressures on the risk of mortality?
- What effect doses the aliskiren-enalapril association have on kidney function in hypertensive diabetic patients?
- What are the new molecules being studied for the treatment of high blood pressure in diabetic patients that have a protective effect on the kidney function as well?

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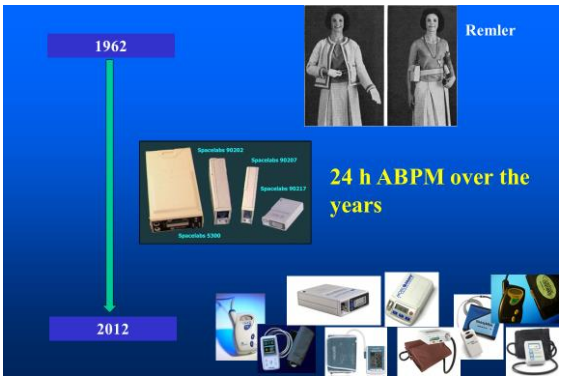
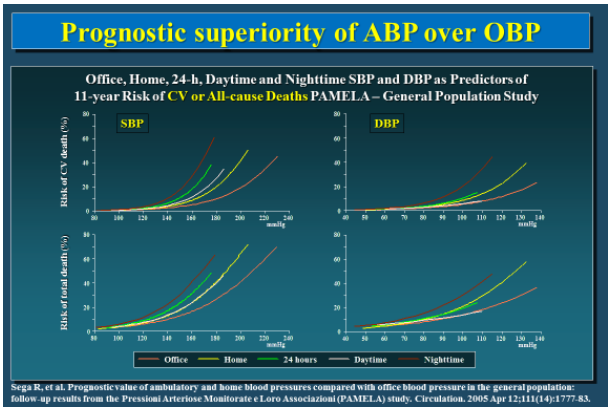
24-hour monitoring of blood pressure in patients suffering from chronic kidney disease



On addressing this topic, Prof. Parati from Milan pointed out how 24-hour blood pressure monitoring, despite still not being a widespread method, is in actual fact capable of providing reliable blood pressure measurements. The data published on nephropathic patients are still insufficient for establishing the specific p blood pressure thresholds for diagnosing disease. In fact, the values used as a reference are the same as those for non-nephropathic patients. As regards the stratification of the risk of mortality these patients are exposed to, 24-hour blood pressure monitoring is a more effective predictor than the classical method with a sphygmomanometer. The great advantage of 24-hour blood pressure monitoring is the nocturnal pressure control that makes it possible to identify *dipper* and *non-dipper* patients. Thanks to this information it is now possible not only to select the really hypertensive patients but also to stratify them based on their degree of cardiovascular risk. Moreover, with this method it is also possible to measure the blood pressure variability, a value that correlates with organ damage. The problem still to be overcome is the identification of the blood pressure targets to be reached with pharmacological treatment in nephropathic patients. The speaker presented the scheme of the ARTEMIS study, designed specifically for obtaining this information.



- When were the first 24-hour blood pressure monitoring devices produced?
- What are the main prognostic meanings of measuring blood pressure over 24 hours?
- Why is it so important to measure nocturnal blood pressure levels?
- What is the prevalence of masked white coat hypertension in nephropathic patients?
- What are the main characteristics of the ARTEMIS study?

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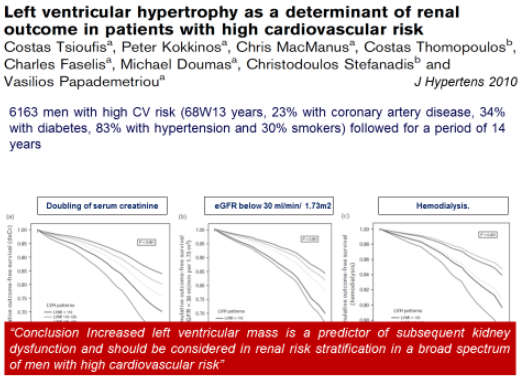
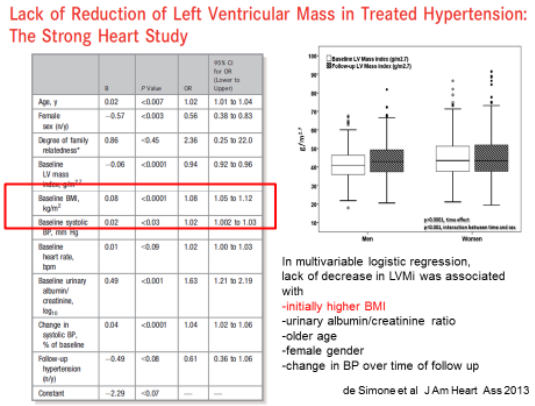
Left ventricular hypertrophy: an important prognostic indicator



Prof. Muiesan from Brescia addressed this topic by pointing out how the presence of left ventricular hypertrophy is associated with a higher incidence of short-term cardiovascular events. In prognostic terms, the most effective method is represented by the measuring of the central blood pressure by means of 24-hour blood pressure monitoring. Treatment of ventricular hypertrophy is based on the use of ACE inhibitors, angiotensin II blockers and calcium channel blockers. The reduction of ventricular hypertrophy improves the prognosis in terms of a reduction in the risk of cardiovascular events. However, these patients are still exposed to a residual level of risk since the hypertrophic condition is never completely reversible. As far as patients with chronic kidney disease and ventricular hypertrophy are concerned, the presence of both these pathological conditions significantly increases the cardiovascular risk. Diabetic patients also suffering from ventricular hypertrophy are frequently exposed to a higher level of risk.



- What are the electrocardiographic limits in detecting left ventricular hypertrophy?
- What correlation exists between left ventricular hypertrophy and supraventricular arrhythmias?
- What is the correlation between left ventricular hypertrophy and nocturnal hypertension?

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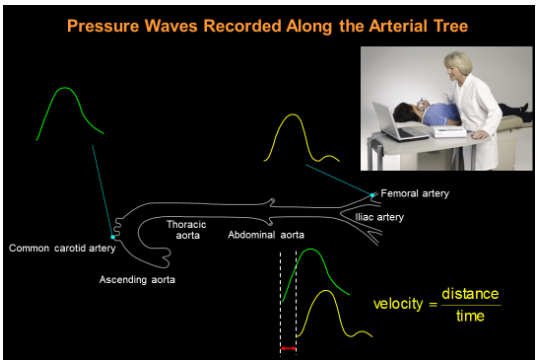
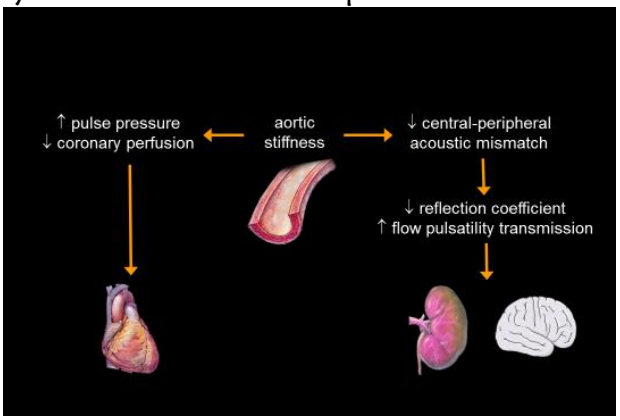
Vascular stiffness and an increase in the propagation speed of the sphygmic wave



Prof. Schillaci from Perugia addressed the concept of vascular rigidity in which the blood flow is reduced, giving rise to an increase in the velocity of the sphygmic wave. Today it is possible to measure the velocity by means of the carotid-femoral measurement. The standards of normality are equal to 10 m/s. In the presence of higher velocities, the cardiac adaptation phenomena begin which preclude the establishing of concentric hypertrophy of the ventricular chamber. In addition, aortic stiffness determines an increase in the kinetic energy that reaches the target organ, such as the kidney and brain. The increment in the pressure pulsatility leads to an increase in pressure at the level of the renal arterioles as well as those of the brain, thus instigating morphological tissue alterations. The measurement of the velocity of the sphygmic wave helps reclassify subjects with cardiovascular risk irrespective of their age. In order to reduce the velocity, it is first necessary to lower the blood pressure. Among the various pharmacological classes, the most effective are the β-blockers, above all due to their effect on the heart rate.



- What are the methods of measuring the propagation velocity of the sphygmic wave?
- What is prognostic value of the propagation velocity of the sphygmic wave?
- Is an altered sphygmic wave an early marker of disease?
- What are the most effective pharmacological treatments for reducing the propagation velocity of the sphygmic wave?
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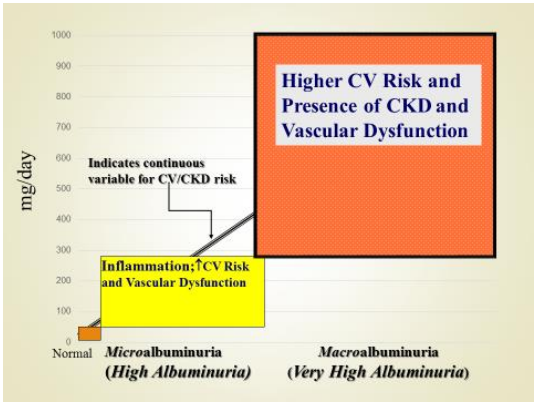
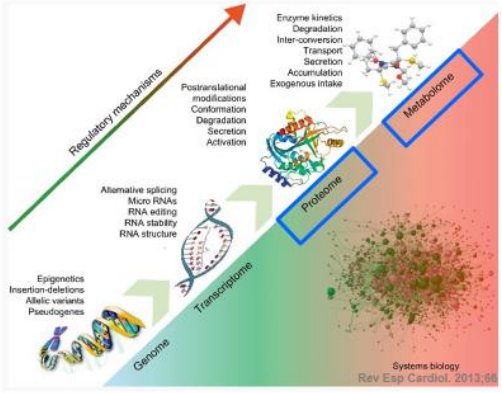
Microalbuminuria: a risk factor or a prognostic indicator?



Prof. Ruilope from Madrid presented data on microalbuminuria as a risk factor for cardiovascular disease and renal failure. Its presence significantly worsens the prognosis in patients suffering from all forms of nephropathy as well as accelerating the evolution towards end-stage renal disease. These considerations make treatment of microalbuminuria essential both with traditional pharmaceutical products such as ACE inhibitors and angiotensin blockers, and with a combination of the aldosterone antagonists. Moreover, the presence of microalbuminuria correlates in a significant manner with the increase in pressure values during the night caused by an inhibitory effect exerted on the renin-angiotensin system. This association seems to be present particularly in diabetic patients with low levels of glomerular filtration. Apropos these considerations, the speaker also presented data on the use of new pharmacological solutions aimed at reducing nocturnal high blood pressure. Prof. Ruilope concluded his talk by stressing the central role of cardiovascular and renal protection as the factor which at least acts in reducing, if not actually antagonising, the action of the renal and cardiovascular risk factors amongst which microalbuminuria plays a key role.



- What correlation is found between the levels of glomerular filtration, albuminuria and cardiovascular risk?
- How much impact does the onset of new cases of microalbuminuria in patients with high blood pressure have on the levels of cardiovascular risk?
- What is the effect of anti-hypertensive pharmacological treatment on the levels of albuminuria?
- Why is it necessary to monitor nocturnal blood pressure in patients with microalbuminuria?

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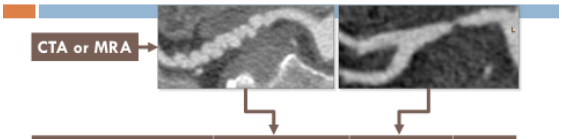
Fibromuscular dysplasia, from clinical to genetic.

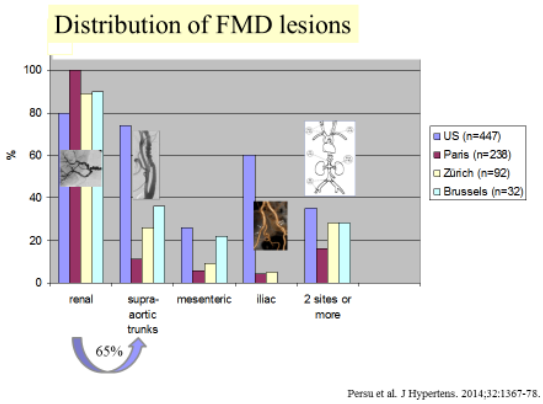
Differences according to the radiological classification



	Angiographic	Multifocal, 276	Focal, 61	p
Clinical	Men	47 (17%)	19 (31%)	0.02
	Age at diagnosis, y	49 [42, 58]	30 [25, 39]	<0.01
	Bilateral stenoses	171 (62%)	13 (21%)	<0.01
	Small kidney	19 (10%)	16 (33%)	<0.01
	Interventions*	50 (35%)	28 (90%)	<0.01

* Among patients with a FU ≥1 year Savard S et al, Circulation 2012;126:3062

Prof. Persu from Brussels spoke about this disease that affects the muscular structure of the arterial tree, giving rise to stenosis of the small and medium-gauge arteries. This is a rare disease and it is estimated that the renal form is present in between 0.4% and 4% of the population. The subjects most at risk are females aged < 50 even though it may also affect more elderly patients. Diagnosis is possible thanks to the CAT scan and MRI techniques. In therapeutic terms, the frontline method is the revascularisation technique and vascular surgery can also be resorted to in case of re-stenosis. The real problem of this disease is that it affects several vascular beds at the same time, so much so that it is defined as a systemic disease. There is a genetic predisposition at the basis of this disease.



Persu et al. J Hypertens. 2014;32:1367-78.

- What is the prevalence of the silent renal form of FMD?
- What are the most effective screening strategies?
- What are the indications for renal revascularisation in patients suffering from FMD?
- What is the percentage of patients who can benefit from revascularisation treatment?
- What are the most common genetic traits in patients suffering from FMD?

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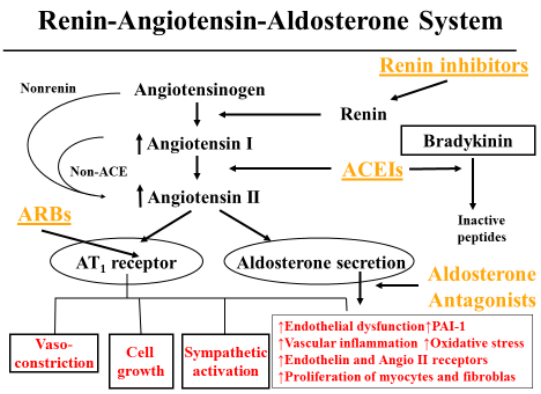
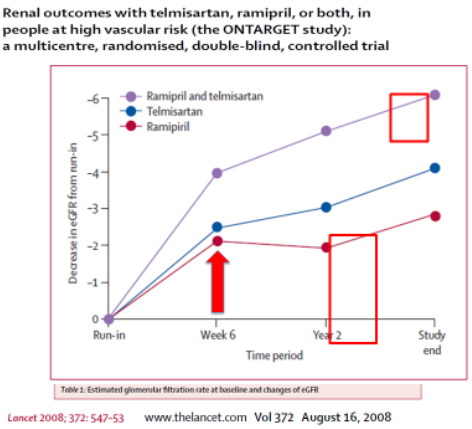
Inhibition of the RAA system: monotherapy vs. combination therapies in patients with chronic kidney disease



Prof. Bianchi from Livorno addressed this topic in the light of trials conducted on patients suffering from high blood pressure, heart failure and proteinuria in the presence of chronic kidney disease. Data in literature fail to support combination therapy based on double or triple blocking of the RAA system. Compared to monotherapy they significantly increase the adverse events without achieving any specific benefits. In the light of these indications, the double blocking of the RAA system cannot be considered a standard therapeutic strategy. In proteinuric patients the ACEi-ARB combination may be indicated in selected cases and only under strict control. In proteinuric patients suffering from heart failure the administration of anti-aldosterones in association with ACEi or ARB may also be taken into consideration. When applied, combination therapy must always be personalised in terms of dosage and titration. In all these cases, the renal function indexes as well as the acid-base balance and potassiemia must be kept under strict control.



- What are the main clinical trials that have been conducted on patients under treatment with combination therapy?
- What are the physiopathogenetic bases justifying the use of combination therapy?
- How useful is it to combine an aldosterone inhibitor with an ACEi or an ARB in subjects suffering from proteinuric nephropathy?

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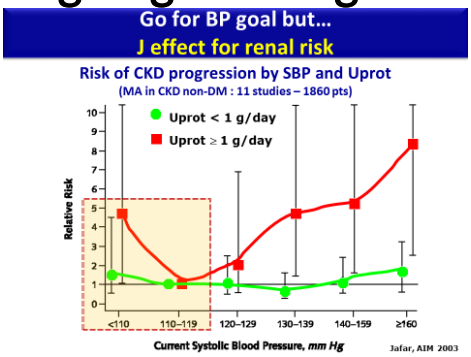
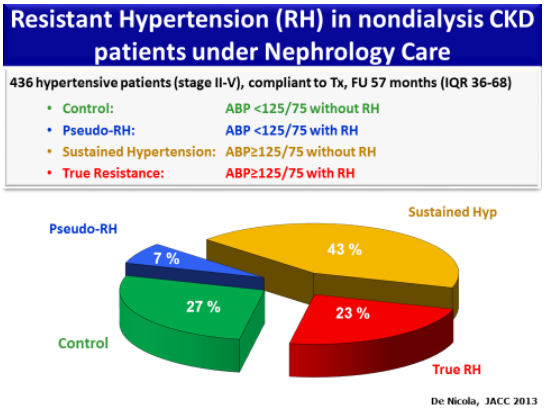
High blood pressure in patients with kidney disease: an ongoing challenge?



Prof. De Nicola from Napoli addressed this topic characterised by a whole series of still unresolved problems, such as the pressure target to be reached, the optimal diagnostic strategies, and the most effective therapeutic protocols. As far as the first point is concerned, no guidelines have been established regarding the minimum blood pressure level to be achieved in the aim of improving kidney function, while at the same time avoiding damage to the outcome of patients in termini of cardiovascular events. There is also a diagnostic problem: the prevalence of both white-coat hypertension and resistant hypertension is extremely high in these patients and as a result, it is necessary to apply appropriate diagnostic methods such as the 24-hour blood pressure monitoring. In therapeutic terms, the main problem is and will always be the extracellular volume that gives rise to the need to balance the intake of sodium in the diet before establishing any pharmacological therapy.



- Is there an effect of the J curve on cardiovascular risk in hypertensive nephropathic patients under anti-hypertensive treatment?
- How frequent is white-coat hypertension in nephropathic patients?
- What is the prevalence of resistant hypertension in nephropathic patients?
- What is the blood pressure value recommended by the speaker as the therapeutic target to be achieved?

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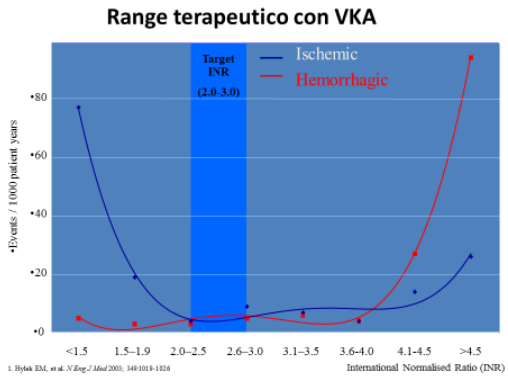
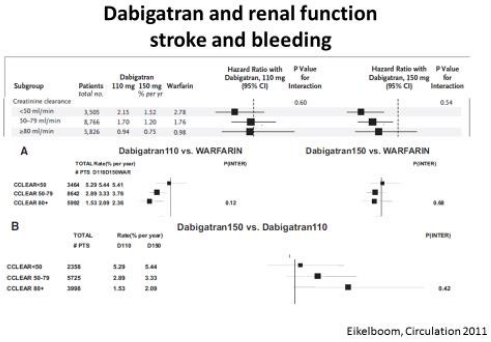
Atrial fibrillation in patients suffering from chronic kidney disease: a real therapeutic challenge



Prof. Genovesi from Milan addressed this topic, which is extremely interesting in the light of the incidence of strokes and bleeding in patients suffering from atrial fibrillation and kidney disease. Chronic renal failure significantly increases the incidence of strokes in patients suffering from atrial fibrillation. In these patients therefore, an anticoagulant drug must be administered that in turn increases the incidence of bleeding however.

The therapeutic window is rather narrow, the INR must be kept stable between 2 and 3. The oral anticoagulants are discordant with strokes and haemorrhaging. Compared to Warfarin the new anticoagulants seem to have an improved effect on both strokes and bleeding. As far as kidney function is concerned the data are less evident, especially in patients with end-stage kidney failure.



Eikelboom, Circulation 2011

- What are the principal scores for monitoring the risk of haemorrhagic stroke in patients with atrial fibrillation and kidney disease?
- What is the prevalence of atrial fibrillation in patients with end-stage kidney failure? Is there a correlation between kidney function and the risk of a having a stroke?
- What is the effect of Warfarin in nephropathic patients with atrial fibrillation?
- What are the data relating to the new oral anticoagulants?

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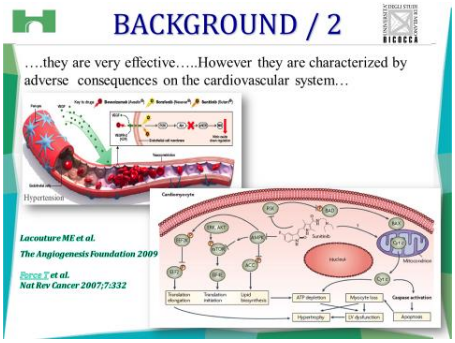
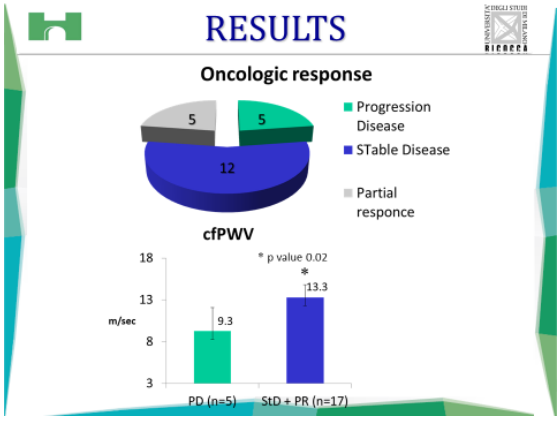
Cardio-oncology: has its time come?



Prof. Giannattasio from Milan addressed this extremely topical issue in view of the new therapeutic protocols in the oncological field. The inhibitors of the endothelial proliferation represent the new frontier in the oncological field, particularly in the treatment of solid tumours. Nevertheless, at a cardiovascular level these drugs give rise to an increment in blood pressure and increase the vascular stiffness, especially in those patients who respond positively to the antineoplastic treatment. In these patients the incidence of heart failure, arrhythmias and pulmonary embolism also increases. The available data indicate that in the near future there will be an increase in the prevalence of cardiopathic patients who survive neoplastic diseases.



- What are the cardiovascular risk factors associated with oncological therapy?
- How much has the prognosis of patients suffering from oncological diseases improved as a result of the introduction of angiogenesis inhibitors in the therapeutic protocols?
- What are the physiopathogenetic mechanisms underlying the toxic effect on the cardiovascular system of the new antineoplastic drugs?
- What are the predictive factors of cardiovascular damage in oncological patients under treatment with angiogenesis inhibitors?

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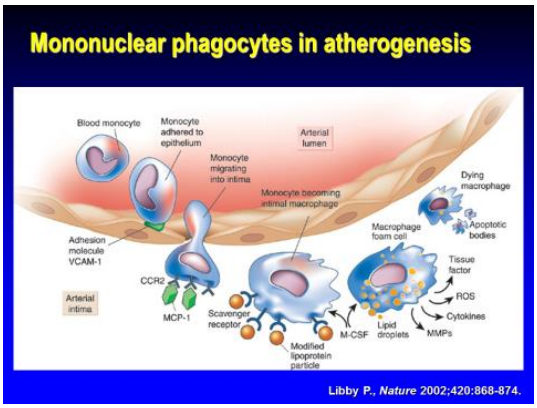
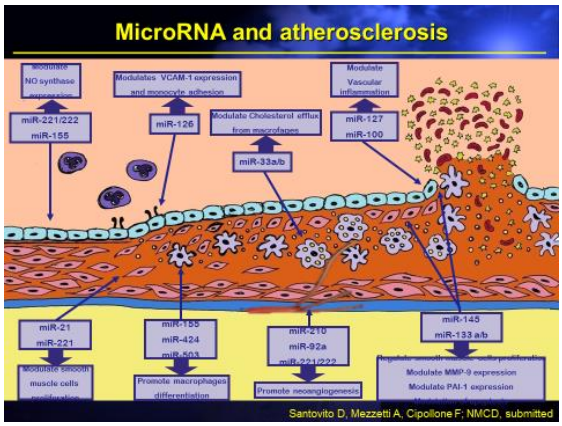
New discoveries in the field of atherosclerosis.



Prof. Cipollone from Chieti presented recently published data dealing with atherosclerosis. The initial events that determine the onset of the atherosclerotic plaque are of an inflammatory origin. The inflammatory processes are also involved in the phenomena that give rise to the rupturing of the athermomatous plaque. In the vulnerable athermomatous plaque, a great number of inflammatory infiltrates are present which give rise to the disaggregation of the collagen at the interstitial level, a factor that in turn determines an increase in the structural instability of the local tissue until it finally ruptures. The presence of instable plaques is an indicator of inflammation that is systemic rather than local. Vulnerable patients present a higher number of instable plaques in different vascular regions and this fact demonstrates their basal pro-inflammatory condition. Also present in the atherosclerotic plaque are micro RNAs which regulate multiple pro-inflammatory processes and their expression can be used to discriminate the asymptomatic plaques from the symptomatic plaques. In pharmacological terms, the next frontier will be represented by the development of new anti-microRNA drugs.



- What are the mechanisms that give rise to the rupturing of the atherosclerotic plaque in the presence of inflammation?
- What is the cholesterol/inflammation ratio?
- How important is the anti-inflammatory effect of the statins on the reduction of the frequency of cardiovascular events?
- Can inflammation become a therapeutic target also in the presence of normal levels of hypercholesterolemia?

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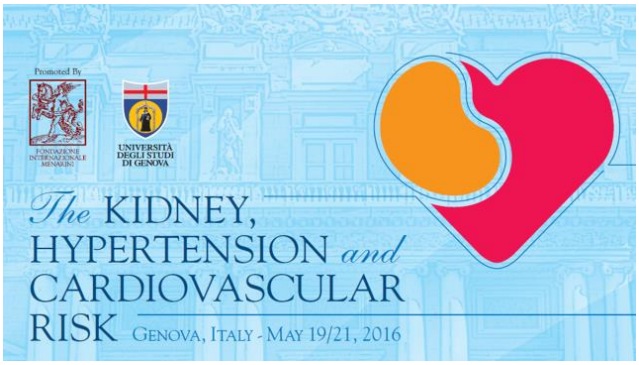

These are just some of the topics addressed during the congress works.

For a more in-depth analysis please visit the website of the Fondazione Internazionale Menarini which also contains the full version of the congress talks.

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