Metabolic syndrome: Should we move on?

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Obesity hasn't always been common, but it has always been dangerous. Hippocrates and his followers knew that the fat died earlier than the lean, and since then medical science has found new methods and models to explain the link. Visceral fat was specifically identified as being a culprit in the development of disease and premature death in 1765, when Morgagni used post-mortem dissection to discover intra-abdominal fat depots in the corpses of the young. Paget and Wadd in the 19th century confirmed the findings that fat within the abdomen and pelvis was a factor in premature mortality. The French physician Jean Vague described 'Apples and Pears' – android versus gynoid obesity - in the 1940s, apportioning the blame for serious chronic illness firmly at the core of the Apple.

Gerald Reaven will always be remembered as the man who first described "Syndrome X" at the Banting Lecture during the American Diabetes Association's annual conference in 1988, even though others would claim the honour of defining and explaining the co-existence of cardiometabolic risk factors under the banner of insulin resistance. Reaven preferred the rather melodramatic 'X' moniker to 'metabolic syndrome' arguing that some factors of the condition, such as hypercoagulibility of the blood were not strictly metabolic. But Reaven and his colleagues were merely taking on the mantle from Hippocrates and the rest, by using modern state-of-the-art science as it then was, to move the understanding of chronic disease and its underlying mechanisms forward another notch. Reaven didn't invent the syndrome to be used as a risk engine. He didn't lay down any of the four different modern sets of criteria, he just gave a rational scientific basis to the observation that seemingly unrelated risk factors co-exist in the same individual. Metabolic syndrome wasn't intended to be a Sheffield or a QRisk, but a physiological rationalisation of the observed clustering of important factors, and should be used as a reminder of their co-existence, so that appropriate global risk screening is carried out, after which Framingham can be utilised.

Gerald Reaven deserves our thanks and applause for his statement, because the subsequent hoo-ha, debate and counter debate has raised the profile of the syndrome among the healthcare profession so that individuals with one component of the syndrome are being screened for the other factors, so that high risk individuals are being accurately identified, and those individuals whose risk can be best modified by intervention, are being treated. Its not Reaven's fault that various self-appointed bodies have tried to shoe-horn his concept into the wrong shaped boxes, or that they disagree so fundamentally in their interpretation of his work!

Metabolic syndrome still has relevance today: ACCORD (2008), ADVANCE (2007) and VADT (2003; [Action to Control CardiOvascular Risk in Diabetes], [Action in Diabetes and Vascular disease: preterAx and diamicroN mr Controlled Evaluation], [Veterans Affairs Diabetes Trial], respectively) all reminded us that to reduce macrovascular risk in type 2 diabetes, the other elements of the metabolic syndrome should be targeted, alongside glycaemic control, and it is now possible to target insulin resistance with pharmacotherapy, thereby using a 'smart bomb' approach to improve the range of risk factors which co-exist with obesity, rather than using insulin and secretagogues which induce weight gain and hypos. The metabolic syndrome has helped the advancement of science, just as Morgagni sticking a scalpel in a cadaver did, but it may have now outlived its usefulness. Because it is now widely viewed as a list of numbers which must be achieved to qualify for the club, other factors and illnesses which are just as much part of the metabolic breakdown as hypertension or dyslipidaemia – conditions such as NASH (non-alcoholic steatohepatitis), PCOS (polycystic ovary syndrome), and even cancers – are being overlooked as they aren't on the guest list, despite being every bit as relevant. The syndrome is now too restrictive, and its boundaries should be pushed back to include the other metabolic sequelae we, due to the further advancement of science, now understand better than Reaven did.

The metabolic syndrome is like a mangle: simple, effective, everyone used it when it was all we had, but science has moved on! ■