BLOOD PRESSURE AND DIABETES: DOUBLE TROUBLE?

Diabetes and high blood pressure are two powerful, if independent, risk factors leading to many serious complications such as cardiovascular diseases states, renal dysfunction and many more. The occurrence of both, diabetes and hypertension, in the same patient does not merely double the chances for developing these problems, but the risk is COMPOUNDED! This is a classic example of 1+1 not equaling two but eleven!

Unfortunately, hypertension is much more frequently seen in a person with diabetes than in the patient who does not have diabetes. In fact, both along with dyslipidemias, central obesity and atherosclerosis are now grouped together in the classical metabolic syndrome, popularly referred to as "Syndrome X".

The pathology which leads to coronary artery disease, cardiac failure, periperal vascular disease, transient ischemic attacks and strokes are all increased significantly when both these risk factors are present in the same patient. Furthermore, there is ample and overwhelming evidence to suggest that microvascular diabetic complications like nephropathy and retinopathy are made worse in the presence of high blood pressure.

Retinopathy is seen earlier in hypertensive as compared to normotensive diabetics. In fact, the severity of retinal changes are closely related to the degree of the hypertension and very significantly, adequate control of the high blood pressure can retard the progression of the retinopathy! There is also considerable evidence that the presence of hypertension is an important factor in accelerating, if not initiating diabetic nephropathy. Microalbuminuria is an important diagnostic factor for the presence of incipient or early diabetic renal disease, and it has been shown that higher degrees of albumin excretion correlates with higher levels of blood pressure. Optimal control of both the blood pressure and the hyperglycemia can return the raised levels of urinary albumin excretion to normal or at the very least, slow down the progression of the disease state to a considerable extent. Even in those patients with diabetes, who have reached a more severe degree of renal dysfunction, those with high blood pressure which has not been adequately controlled, will tend to progress to the end stage at a much faster pace.

In fact, there are people who feel that once a person with diabetes develops a certain degree of dysfunction, there comes a stage of "no return" when even tight glucose control will not be able to stop the relentless progression of the disease state. Even in such circumstances, tight control of the blood pressure (120/80) does help in slowing down the progression!

Thus, patients with high blood pressure are those at greater risk of developing the full blown picture of end stage renal disease as compared to those who are normotensive, or those in whom the blood pressure is optimally controlled.

The story is similar for diabetic retinopathy.

The importance of tight blood glucose control in decreasing the long term complications has been highlighted in recent mega-trials such as the DCCT and the UKPDS and I do not intend going into details here. But there is one excellent trial which I would like to mention.

The importance of controlling hypertension in diabetes is brought about by figures given from the Joslin Clinic. Since 1939, they followed all Type 1 patients who were seen within one year of the diagnosis of the disease. This homogenous group was followed closely till 1980 or until death, which ever was earlier. Ninety percent of the patients survived 20 years, 77% survived 30 years and 46% of the patients survived the 40 years of the study. Of all the patients who died during the 40 years of the study, 48% of the mortality was from coronary artery disease whilst 31% died from renal disease. Most of the latter also had evidence of significant coronary artery disease. Most of those who died with renal disease were in the age from 30-45 years whilst those who died from the coronary episodes were spread over the full age spectrum. Hypertension was present in all the patients dying from the renal disease and in all but three patients who died from the coronary disease. Uncontrolled hypertension was RARELY seen in those who survived !