

S28-4 Nitrate tolerance and endothelial dysfunction

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Organic nitrates are widely used in the management of such cardiovascular diseases as angina pectoris, acute myocardial infarction and congestive heart failure. Despite their beneficial haemodynamic and anti-ischaemic effects, the usefulness of organic nitrates is limited by tolerance, which develops shortly after treatment starts. More importantly, long-term (e.g. 3-10 days) nitroglycerine (NTG) therapy causes endothelial dysfunction in the coronary and forearm arterial beds in humans. It was found that the functions of endothelium-derived nitric oxide, prostacyclin and hyperpolarizing factor undergo down-regulations in arteries following chronic NTG administration. It has been suggested that an increased production of superoxide in vascular walls plays an important role in these dysfunctions affecting endothelium-derived relaxing factors in NTG-treated animals. In the presentation, we introduce our recent results concerning the possible mechanism underlying the NTG-induced dysfunction of endothelium-derived relaxing factors.