

EFFECTIVENESS OF LOWERING BLOOD PRESSURE TO PREVENT STROKE VERSUS TO PREVENT CORONARY EVENTS

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The concept of the J-Curve effect phenomenon has been around for a long time and is a subject of contention. The J-Curve effect describes an inverse relationship between low blood pressure (BP) and cardiovascular complications. Since the coronary arteries are perfused during diastole, this effect is mostly seen with low diastolic BP in the range of 70-80 mmHg depending on preexisting coronary artery disease (CAD), hypertension, or left ventricular hypertrophy (LVH). In contrast to cardiovascular complications, no J-Curve effect has been noted for strokes. A medline search of the English language publications between 1992 and 2010 regarding this topic was conducted and 11 articles were selected and will be discussed in the brief review together with collateral literature. Studies have shown that the cerebral blood flow (CBF) remains fairly constant through a wide range of BPs ranging from 60-150 mmHg of mean arterial pressure (MAP). However, in contrast to coronary circulation which depends on diastolic BP, the cerebral circulation depends mostly on systolic BP. In a recent study, using a transcranial doppler, the CBF autoregulation varied between 40-125 mmHg of MAP. These studies show that the CBF is not seriously affected even with very low diastolic BPs and this could explain the lack of a J-curve effect regarding strokes with low diastolic BPs in contrast to CAD complications. In conclusion, the majority of the reviewed publications suggest a J-Curve effect with low diastolic BP and systolic BP for CVD complications, but not stroke complications.