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(57) Abstract

Ultrasonic visualisation of a subject, particularly of perfusion in the myocardium and other tissues, is performed using novel gas–containing contrast agent preparations which promote controllable and temporary growth of the gas phase *in vivo* following administration and can therefore act as deposited perfusion tracers. The preparations comprise an injectable aqueous medium comprising dispersed gas and an injectable oil–in–water emulsion in which the oil phase comprises a diffusible component capable of diffusion *in vivo* into the dispersed gas to promote temporary growth thereof, such that material present at the surfaces of the dispersed gas phase and material present at the surfaces of the dispersed oil phase have affinity for each other, e.g. as a result of having opposite charges. In cardiac perfusion imaging the preparations may advantageoulsy be coadministered with vasodilator drugs such as adenosine in order to enhance the differences between return signal intensity from normal and hypoperfused myocardial tissue respectively.