# Computed tomographic angiography (cta)

Health & Medicine

Computed Tomographic Angiography (CTA) Computed Tomographic Angiography (CTA) Importance of Computed Tomographic Angiography This medical test is needed when a patient has a defect involving the cardiovascular and respiratory system. It is important in identification of blood vessels found in the brain. In cases where blood vessels feed tumors, it is utilised. It is vital for diagnosis and examination of whole coronary atherosclerotic burden, both obstructive and non obstructive. It is also important for the management of structural and coronary heart interventions. CTA is utilised in invasive coronary angiography. Information deduced from CTA assists in prevention of heart attacks and stroke. Due to its enhanced, temporal and spatial resolution, it has been utilised as a less invasive technique in the diagnosis of coronary artery disease.

Importance in assessing aneurysm

Aneurysms rise in occurrence with age; they are more common in women and are connected to certain genetic conditions. CTA has been proposed as an alternative choice for intra – arterial digital subtraction angiography to check for aneurysms. CTA is used to characterise cerebral aneurysms for assessing the possibility of their rupture. It helps produce 3D geometries of cerebral aneurysms.

Reasons why Computed Tomographic Angiography is used in assessing rupture risk

Coronary lesions are risked to ruptures. CTA scanners avail for detection, quantification and characterization of coronary atherosclerotic lesions. Non invasive CTA is utilised to recognize patients with high or low risk chances of developing cardiac conditions due to the constitution of plaques. Computational fluid dynamics permits for computation of lesion particular

endothelial shear tension. They also permit partial flow reserve. This adds functional details to evaluation of plaques.

References

Cebral, J. R., Castro, M. A., Burgess, J. E., et al., 2005. Characterization of Cerebral Aneurysms for Assessing Risk of Rupture By Using Patient – Specific Computational Hemodynamics Models. American Journal of Neuroradiology, 26, pp. 2550 – 2559.

Goncalves, P. A., Campos, C. A. M., Serruys, P. W. & Garcia – Garcia, H. M., 2014. Computed tomography angiography for the interventional cardiologist. European Heart Journal: Cardiovascular Imaging. doi: 10. 1093/ehjci/jeu053

Maurovich – Horvat, P., Ferencik, M., Voros, S, Merkely, B. & Hoffmann, U. (2014). Comprehensive plaque assessment by coronary CT angiography. Nature Reviews Cardiology. doi: 10. 1038/nrcardio. 2014. 60.

Wardlaw, J. M. & White, P. M., 2000. The detection and management of unruptured intracranial aneurysms. BRAIN: A Journal of Neurology, 123 (2), pp. 205 -221. doi: 10. 1093/brain/123. 2. 205.