

Health care monitoring and treatment for coronary artery diseases: challenges and issues

ABSTRACT

In-stent restenosis concerning the coronary artery refers to the blood clotting-caused re-narrowing of the blocked section of the artery, which is opened using a stent. The failure rate for stents is in the range of 10% to 15%, where they do not remain open, thereby leading to about 40% of the patients with stent implantations requiring repeat procedure within one year, despite increased risk factors and the administration of expensive medicines. Hence, today stent restenosis is a significant cause of deaths globally. Monitoring and treatment matter a lot when it comes to early diagnosis and treatment. A review of the present stent monitoring technology as well as the practical treatment for addressing stent restenosis was conducted. The problems and challenges associated with current stent monitoring technology were illustrated, along with its typical applications. Brief suggestions were given and the progress of stent implants was discussed. It was revealed that prime requisites are needed to achieve good quality implanted stent devices in terms of their size, reliability, etc. This review would positively prompt researchers to augment their efforts towards the expansion of healthcare systems. Lastly, the challenges and concerns associated with nurturing a healthcare system were deliberated with meaningful evaluations.

Keyword: In-stent restenosis; Coronary Artery Disease (CAD); Wireless pressure sensor; Drug-Eluting Stent (DES); Hyperthermia; Computed Tomography Angiography (CTA); X-ray; Radio Frequency (RF) resonant heating; Temperature regulation