Measuring serum troponin (TnT) on in-patients-6 hour rule

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The wrong diagnosis can have fatal results for the cardiac patient. Up to five percent of patients with acute myocardial infarction are missed. Lack of knowledge of recommended guidelines can contribute to inappropriate tests being sought which can contribute to inaccurate diagnosis. Cardiac biomarkers are critical in the rapid diagnosis of acute coronary syndrome. Cardiac biomarkers measure myocardial cell death. Troponin T (TnT) is a cardiac biomarker that is used to define myocardial infarct and also those at risk. A literature review revealed that there was not an algorithm for when TnT samples should be taken for in-patients complaining of chest pain. This literature review included all hospitals in Europe. It is recommended by best practice that a serum TnT sample is taken six hours after the onset of initial chest pain and repeated again six hours later. If there has been no TnT rise twelve hours after the onset of chest pain then a cardiac cause for the chest pain is unlikely. TnT samples taken prior to the recommended six hours from the patients’ onset of chest pain are of no clinical value as the TnT is not yet detectable in the bloodstream. An audit on the time of the patients’ chest pain and the time of when the serum TnT was taken, was carried out over a period of one month in University Hospital Waterford. It was observed that over 66% were taken before the recommended six hours. This may lead to the potential of patients receiving a missed or wrong diagnosis. This incorporated a wasting of €13968 of the medical budget. The innovation design consists of the introduction of an algorithm for when serum TnT samples should be taken. The algorithm was formulated by Norma Caples. It would aid the person, in a step by step process, in making a decision if a TnT sample was needed and if so when it should be taken. A literature review did not show of any algorithm in existence for the taking of TnT on inpatients. A re-audit on the time of the patients’ chest and the time of when the serum TnT was taken proved that the algorithm was successful in attaining its goals. It revealed a positive relationship between the algorithm being implemented and appropriate serum TnT samples being taken. One hundred percent of the serum TnT samples were taken as per recommended guidelines.

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Acute myocardial infarction clinical protocol on quality indicators: A decade of experience

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Despite technological advances and the easier access to information, we are still witnessing a scenario where cardiovascular disease is a major cause of death. Unfortunately, some people come to death as a result of errors in processes related to their care. In this scenario, the concern of institutions to ensure the quality of their services and patient safety gained strength to follow the model of disease management. This constantly checks whether the patient underwent right procedure at the right time, in the right way, for the right person, and thus achieve the best possible results. The Albert Einstein Hospital has experience in cardiovascular quality indicators, after more than one decade of development and implementation of clinical protocol of acute myocardial infarction (2003-until today) is the main focus of this presentation. It was based on clinical guidelines and multi-strategy approach, daily monitoring, reduction of variability, setting goals, benchmarking, feedback to administrative and clinical staff and a clinical event board to evaluate all STEMI cases (ER, patient’s transportation, cath lab, CCU and Cardiology Program) to identify opportunities for improvement in real time. This experience resulted in an increase in compliance and quality of care indicator, a progressive goal reduction of door to balloon time (109→90→78→70→60 minutes) and a mortality reduction (3.7 in 2013→3, 3 in 2014→2.9 in 2015).

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