ST Map ECG software improves nurses' use of and attitude toward ischemia monitoring and the quality of patient care[1]

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"With ST Map, 90% of the nurses in the Cardiac ICU are now regularly monitoring for ischemia, compared to a baseline of 13%. Use of ST Map reduced time to acquisition of 12-lead ECG from as long as 15 minutes to under 5 minutes."

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Purpose

ST segment monitoring is useful for detecting ischemia.[2] Evidence suggests that nurses do not activate the ST segment monitoring feature on the bedside monitor because they perceive it to be difficult to use.[3] ST Map ECG software was designed to make ST segment monitoring easier by incorporating graphical displays for ST segment changes. The purpose of this study was to determine if nurses' use of and attitude toward ST segment monitoring and the quality of patient care related to ECG monitoring improve with the availability of ST Map software.

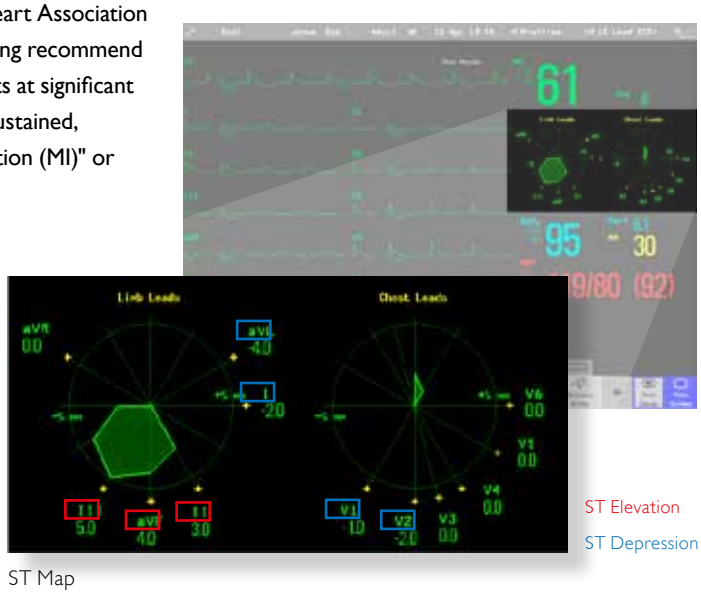
Background/significance

Nurses should activate continuous ST segment monitoring to identify patients with acute, but often silent myocardial ischemia. Studies show that although 80 to 90% of transient ischemic events are asymptomatic, they are significant markers for adverse outcomes. The American Heart Association Practice Standards for ECG Monitoring recommend ST segment monitoring for all patients at significant risk for myocardial ischemia that, if sustained, may result in acute Myocardial Infarction (MI)" or extension of an MI.[4,5]

Methods

This one-group pre-/post-intervention study of 61 staff nurses and 202 patients with acute coronary syndrome was conducted in the Cardiac ICU at Yale-New Haven Hospital. We obtained baseline data on nurses' use of and attitude toward ST segment monitoring and the quality of patient care. We then provided education on ST segment monitoring and the ST Map software, and the ST Map software was installed on all bedside monitors. Nurses used the new ST Map software for 4 months. We then obtained follow-up data on the same outcomes we examined at baseline. We used the McNemar test (nurse data) and chi square and t-test (patient data) to determine changes with the availability of ST Map software.

Traditional ST segment monitoring



ST Map

PHILIPS

Results

The sample of 61 nurses was 93% female, with a mean age of 41 years. Before ST Map was instituted only 13% of the nurses had ever used ST segment monitoring vs. 90% after ST Map (p<.001) (Figure 1). The most common reason for not using ST segment monitoring before ST Map was inadequate knowledge (62%). The most common reason for liking ST segment monitoring after ST Map was knowing when the patient had ST segment changes (80%) (Figure 2). The sample of 202 patients was 73% male, with a mean age of 62 years. Time to acquisition of a 12-lead ECG in response to symptoms or ST segment changes before ST Map was 5-15 minutes vs. always <5 minutes after ST Map (p<.001). There was no difference in time to return to cardiac cath lab.

Conclusions

ST Map was associated with more frequent use of ST segment monitoring, improved attitudes of nurses to ST segment monitoring, and shorter time to the acquisition of a 12-lead ECG in response to symptoms or ST segment changes.

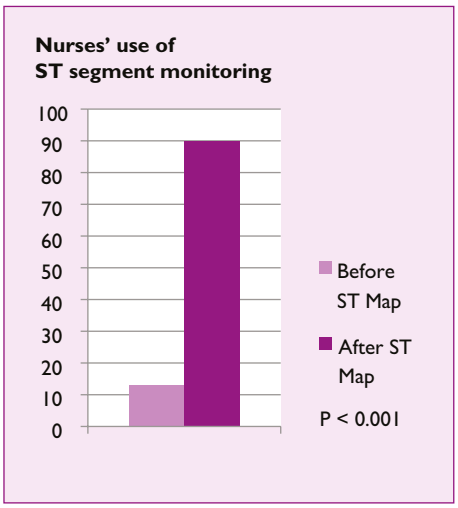


Figure 1

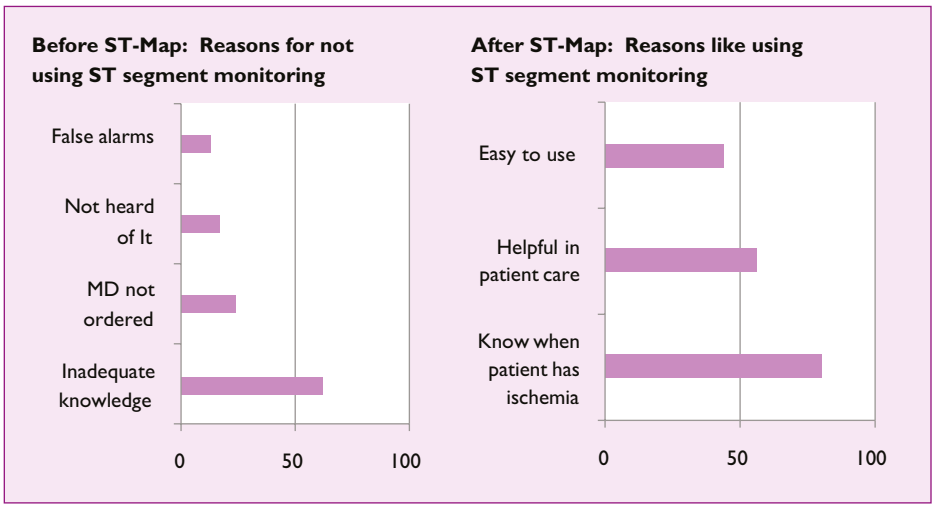


Figure 2

References:

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