



CHESTS 3 PREDICTIVE SCORING MODEL

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BACKGROUND

There are many predictive scoring models related to acute coronary syndrome (ACS), such as GRACE, TIMI, and HEART. When used outside the setting of chest pain, these diagnostic tools can be challenging to interpret correctly.

The CHESTS 3 predictive scoring model could help determine cath outcomes in critically ill and post-operative patients suspected of having ACS. CHESTS 3 takes into account factors typically used to help diagnose critically ill and post-operative patients suspected of having ACS.

METHODS

A retrospective observational study was conducted by Baylor research interns who collected data on 30 critically ill ICU and post-operative patients who were suspected of having Acute Coronary Syndrome.

CHESTS 3 takes into account the following factors in critically ill and post-operative patients suspected of having ACS: **Chest pain/Conduction abnormality, Hemodynamic instability, new Echo abnormality, new ST changes, Troponin levels, and ST elevation.** We looked at the conduction abnormality of those patients who were unable to communicate their chest pain. Risk stratification classifies a score of 1 as low risk, 2 as moderate risk suggesting additional investigation, and 3 as high risk or definitive acute coronary syndrome.

SUBJECT CRITERIA

Inclusion criteria

- 18 years or older
- Subject is a critically ill ICU or post-operative patient
- Left Heart Cath during Index hospitalization

Exclusion criteria:

- Less than 18 years of age
- Not an ICU or post-operative patient
- No Left Heart Cath during Index Procedure
- Presented with a diagnosis of STEMI

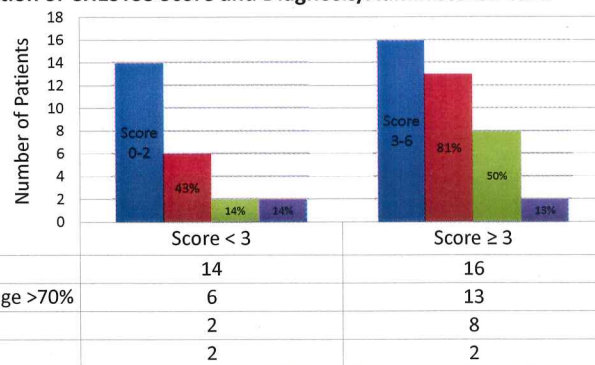
OBJECTIVES

Primary: Determine if CHESTS 3 predictive scoring model can be used to help determine cath outcomes of critically ill and post-operative patients suspected of having acute coronary syndrome (ACS).

Secondary: Analyze patient records to determine differences in cath outcomes between patients that were found to have ACS and those that were not.

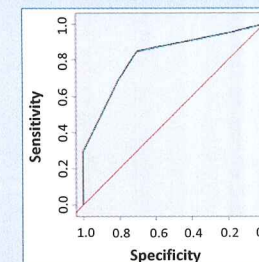
RESULTS (GRAPH AND DATA TABLE)

Correlation of CHESTS3 Score and Diagnosis/Administered Care



Variable	CHESTS 3 Scores ≥ 3 N (% out of 16)	CHESTS 3 Scores < 3 N (% out of 14)	P-value
Total Patients	16	14	
Chest Pain or Conduction Abnormality	7 (44)	4 (29)	.46
Hemodynamic Instability	11 (69)	6 (43)	.27
New Echo abnormality	8 (50)	1 (7)	.02
New ST changes	8 (50)	1 (7)	.02
ST Elevation	4 (25)	0 (0)	.10
Troponin above normal	15 (94)	3 (21)	<.001
	Cath Outcome		
	CHESTS 3 Scores ≥ 3 N (% out of 16)	CHESTS 3 Scores < 3 N (% out of 14)	
Coronary Blockage > 70%	14 (88)	6 (43)	.02
Unstable/Hazy Plaque	1 (6)	0 (0)	1.0
Thrombus	1 (6)	0 (0)	1.0
Percutaneous Coronary Intervention	8 (50)	2 (14)	.06
CABG	2 (13)	2 (14)	1.0
Revascularization within 3 months	1 (6)	0 (0)	1.0

RESULTS (STATISTICAL DATA CURVE)



CONCLUSION

CHESTS 3 analysis found a score of ≥3 associated with a coronary blockage >70% and a higher incidence of percutaneous intervention.

Study Limitations:

- Retrospective study
- Small sample size

Further Study:

- Application of scoring system to a larger population

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CITATIONS

"Acute Coronary Syndrome." *American Heart Association*. American Heart Association, 19 March 2013.

"A Chest Trauma Scoring System to Predict Outcomes." Jennifer Chen, MD. This study was presented at a Surgical Society Meeting on October 17-20, 2013.