Comparison of Weighted and Equally Weighted Composite Quality Score(CQS) for Acute Myocardial Infarction

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Background & Objective

- HIRA has assessed the quality of acute myocardial infarction (AMI) for Pay for Performance (P4P) Demonstration Project since July, 2007.
- To improve clinicians' acceptance for composition of quality score, the weighted CQS for AMI was developed as an alternative to the equally-weighted CQS used in the CMS/HQID.
- The objective of the study was to compare the association between the weighted and the equally-weighted CQS for AMI.

Weighted CQS - Example

Measures	Numerator	Denominator	Weight	Calculation	Score
Thrombolytic received within 60 minutes of hospital arrival	20	20			
Primary PCI within 120 minutes of hospital arrival	76	80			
Reperfusion group score	96	100	4.5	0.96 x 4.5	4.32
Aspirin at arrival	80	80			
Aspirin prescribed at discharge	76	80			
Beta-blocker prescribed at discharge	79	80			
Medication group score	235	240	2.5	0.98 x 2.5	2.448
30 day mortality rate - actual	4	111			
30 day mortality rate - expected	6.899	111			
actual survival(1 - actual)	0.964	-			
expected survival(1 - expected)	-	0.938			
Outcome (Survival index)	0.964	0.938	3.0	1.0277 x 3.0	3.083
Weighted CQS	[(4.32 + 2.448 + 3.083) / 10] x 100				98.51

Group	Measure
Reperfusion	➤Thrombolytic received within 60 minutes of hospital arrival ➤Primary .PCI within 120 minutes of hospital arrival
Medication	➤Aspirin at arrival ➤Aspirin prescribed at discharge ➤Beta-blocker prescribed at discharge
Outcome	➤30 day mortality rate (replaced as a survival index)

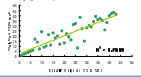
- To calculate the weighted CQS for each hospital, firstly, the quality score of each performance measure group was calculated.
- Secondly, the weight score for each measure group was derived from the expert panel using Delphi method.

Methods

- Data
  Using administrative and clinical abstract data from tertiary hospital in Korea, thus total AMI 4,200 cases in 43 hospitals was collected.
- Six AMI performance measures were categorized into three groups to calculate weighted CQS.

Results

- Spearman rank correlation analysis was done to determine the relationship between the weighted and equally weighted CQS .
- Correlation coefficient was 0.876, which was significant statistically (p<0.000)



Conclusions

- This study demonstrated convergent validity of the weighting method for deriving CQS for AMI.
- Weighted composition score was better accepted to the clinician group compared to the conventional equally weighted score.

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