

## Predictive Value of Risk Index and other Shock Indices for In-Hospital Major Adverse Cardiovascular Events in Patients with Acute Myocardial Infarction Undergoing Emergent Percutaneous Coronary Intervention

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**SUMMARY.** We aimed to determine whether the prognostic value of the shock index (SI) and its derivatives are more valuable than that of the thrombolysis in myocardial infarction risk index (TRI) for predicting adverse outcomes in patients with ST-segment elevation myocardial infarction (STEMI) undergoing primary percutaneous coronary intervention (PCI). A total of 62 patients with AMI undergoing primary or emergent PCI (STEMI within 48h or NSTEMI within 72h of maximum chest pain) from June 2020 to June 2022 were analyzed in a prospective observational study. The SI, modified shock index (MSI), age MSI (age\*MSI), diastolic SI (DSI), and TRI at admission were calculated. Clinical endpoints were in-hospital complications, including all-cause mortality, acute heart failure, cardiogenic shock, cardiac arrest, re-infarction, and life-threatening arrhythmia. Multivariate analyses showed that a high SI, MSI, age SI, age MSI, DSI, and TRI at admission were associated with a significantly higher rate of in-hospital complications. The predictive value of the DSI, MSI and age MSI was comparable with that of the TRI (area under the receiver operating characteristic curve: 0.801, 0.809 and 0.838, respectively and 0.800 for TRI) for predicting in-hospital complications. The MSI, DSI and age MSI appear to be similar to the TRI for predicting in-hospital complications in patients with AMI undergoing primary or emergent PCI.

**RESUMEN.** Nuestro objetivo fue determinar si el valor pronóstico del índice de choque (SI) y sus derivados son más valiosos que el índice de riesgo de trombolisis en el infarto de miocardio (TRI) para predecir resultados adversos en pacientes con elevación del segmento ST miocárdico. infarto agudo de miocardio (IAMCEST) sometido a una intervención coronaria percutánea (ICP) primaria. Se analizó un total de 62 pacientes con IAM sometidos a ICP primaria o emergente (STEMI dentro de las 48 h o NSTEMI dentro de las 72 h del dolor torácico máximo) desde junio de 2020 hasta junio de 2022 en un estudio observacional prospectivo. Se calcularon el SI, el índice de shock modificado (MSI), el MSI de edad (edad\*MSI), el SI diastólico (DSI) y el TRI al ingreso. Los criterios de valoración clínicos fueron las complicaciones intrahospitalarias, incluida la mortalidad por todas las causas, la insuficiencia cardíaca aguda, el shock cardiogénico, el paro cardíaco, el reinfarto y la arritmia potencialmente mortal. Los análisis multivariados mostraron que un alto SI, MSI, edad SI, edad MSI, DSI y TRI al ingreso se asociaron con una tasa significativamente mayor de complicaciones hospitalarias. El valor predictivo de DSI, MSI y edad MSI fue comparable con el de TRI (área bajo la curva característica operativa del receptor: 0,801, 0,809 y 0,838, respectivamente y 0,800 para TRI) para predecir complicaciones intrahospitalarias. El MSI, el DSI y el MSI de la edad parecen ser similares al TRI para predecir complicaciones intrahospitalarias en pacientes con IAM sometidos a ICP primaria o emergente.

**KEY WORDS:** myocardial infarction, non-ST segment elevation, shock index, ST-segment.

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