White blood cell subtypes in first 72 hours after acute myocardial infarction as an independent and incremental long-term mortality Delivery

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all authors report no conflict of interest

Background: White blood cell count and differential provide an inflammatory marker of adverse outcome following acute myocardial infarction.

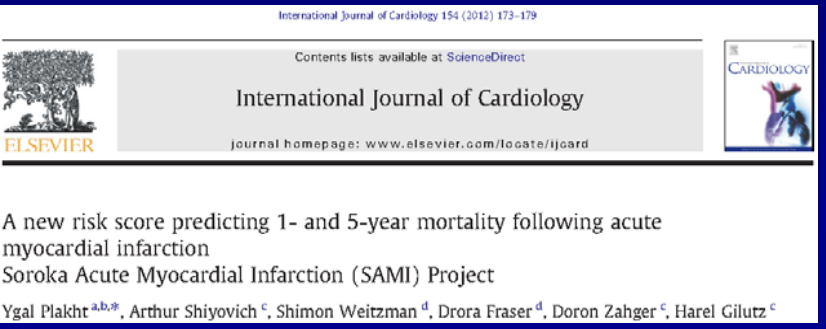
Objective: To evaluate the predictive ability of WBCs for long-term (10 years) mortality after AMI, adjusted for the Soroka Acute Myocardial Infarction (SAMI) score

Study population: 2,129/2,772 AMI patients discharged alive during 2002-2004

- Exclusion: cancer, chronic inflammatory diseases, or systemic infections

Data: WBC within 72 hrs following admission, were divided into quartiles (Q1-Q4)

Follow-up : up to 10.5 years (median 8.1 years) **End point:** all-cause mortality



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A new risk score predicting 1- and 5-year mortality following acute myocardial infarction
Soroka Acute Myocardial Infarction (SAMI) Project

Ygal Plakht [a,b,*], Arthur Shiyovich [c], Shimon Weitzman [d], Drora Fraser [d], Doron Zahger [c], Harel Gilutz [c]

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Letter to the Editor

Soroka acute myocardial infarction (SAMI) score predicting 10-year mortality following acute myocardial infarction

Ygal Plakht [a,b,*], Arthur Shiyovich [c], Shimon Weitzman [d], Drora Fraser [d], Doron Zahger [e], Harel Gilutz [e]

The SAMI Score

- Simple assessment tool Based on “real life” available clinical information
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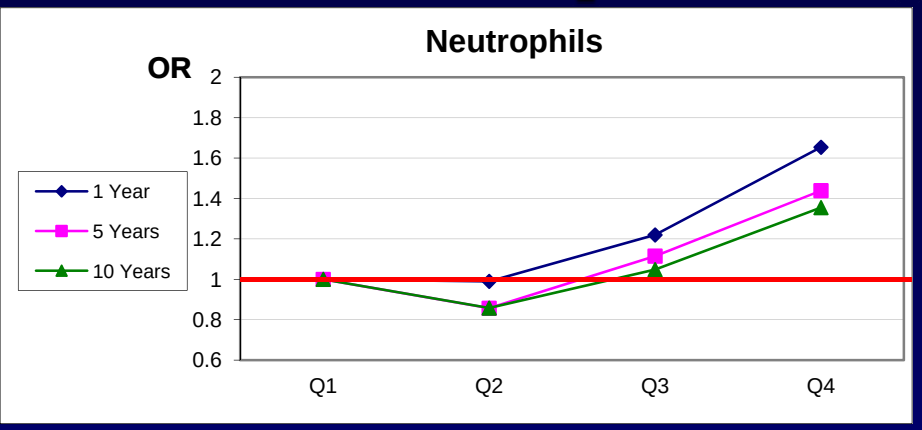
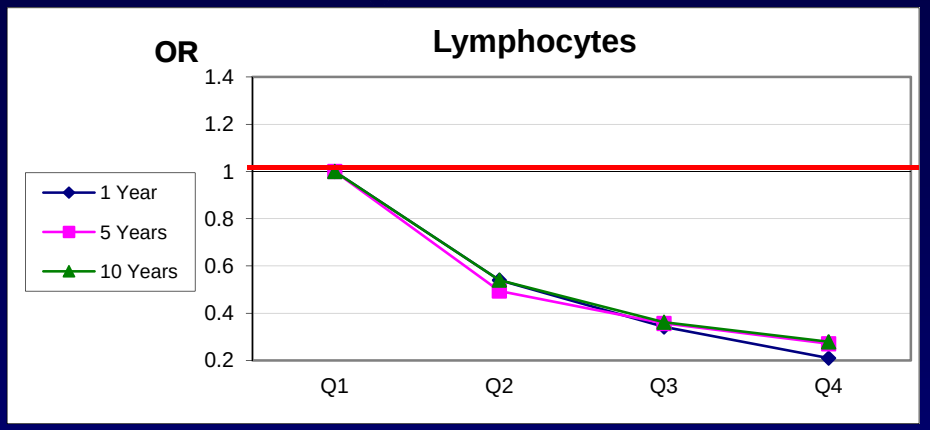
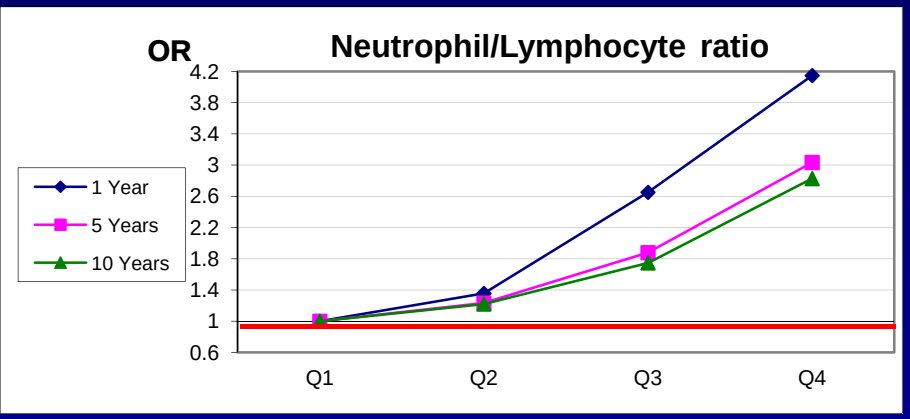
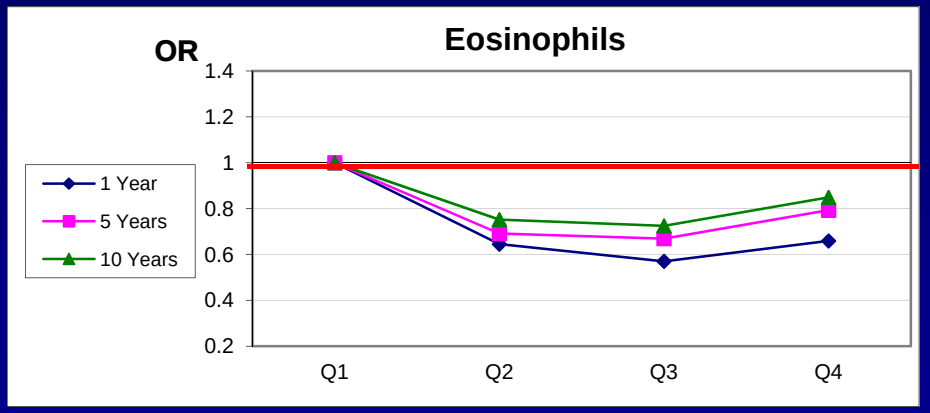
- Validated for predicting 1-and 5- and 10-year mortality
- Includes a variety of cardiovascular and non-cardiovascular co-morbidities

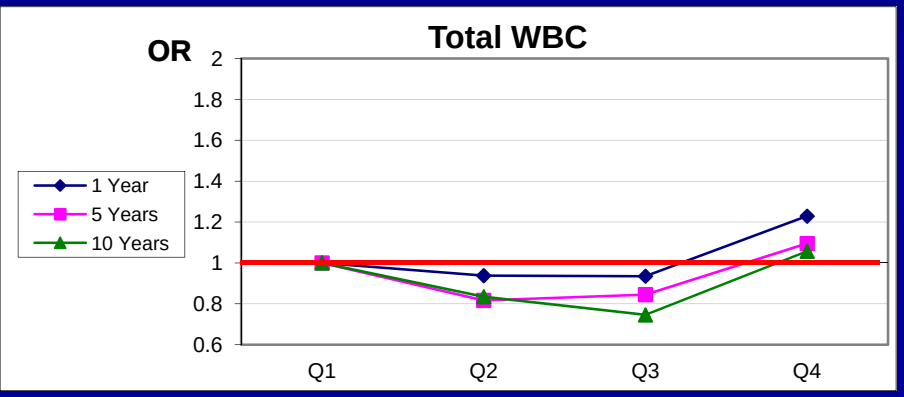
Results$_1$ – WBC Q and Mortality risk

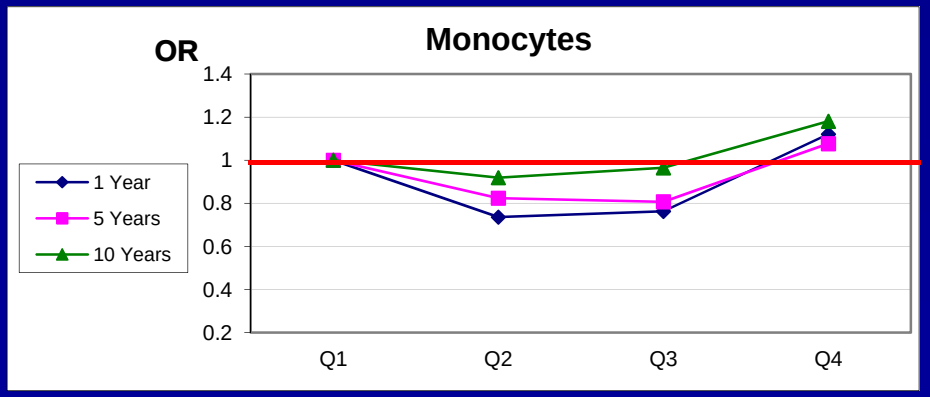




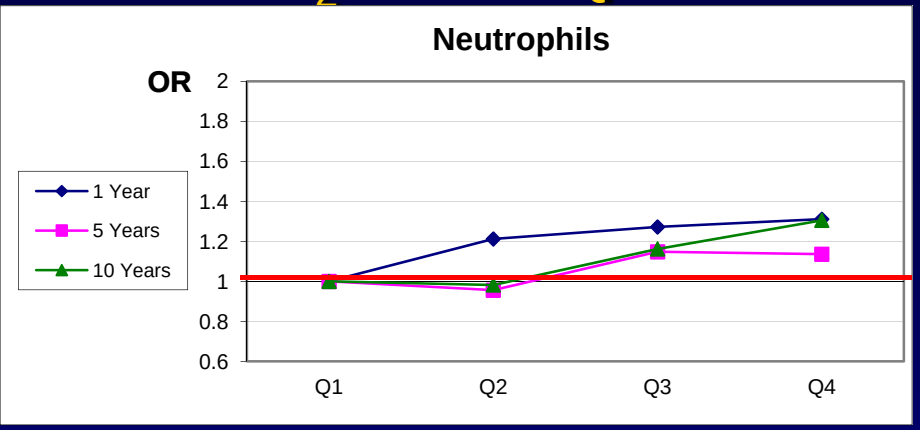


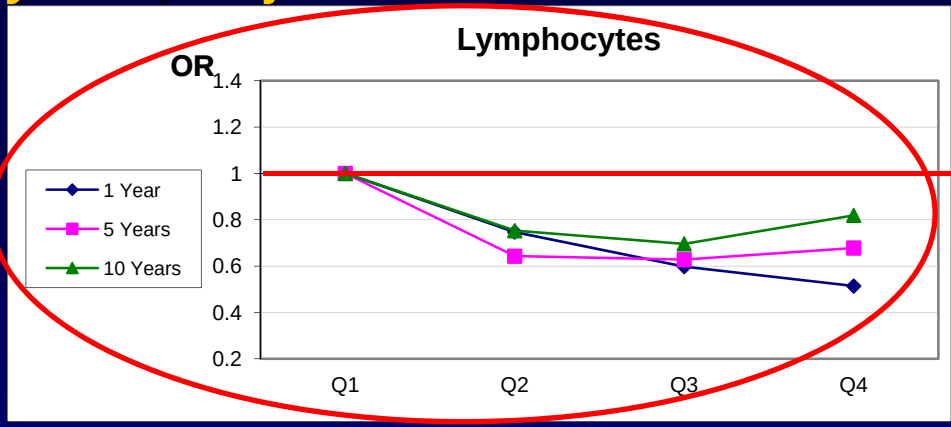


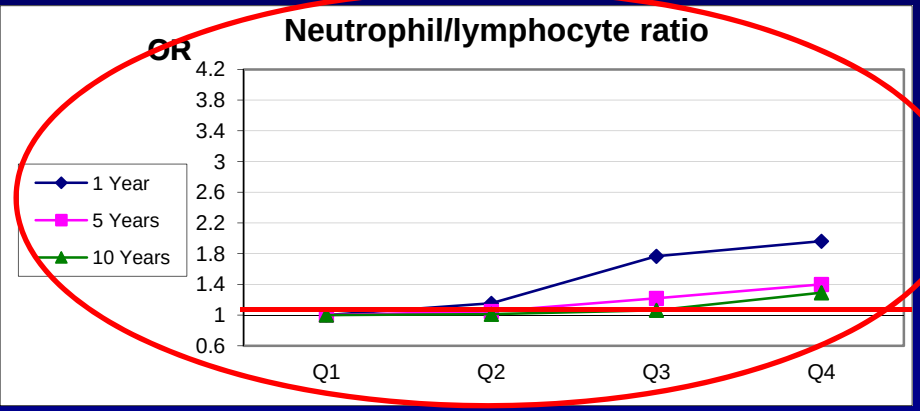


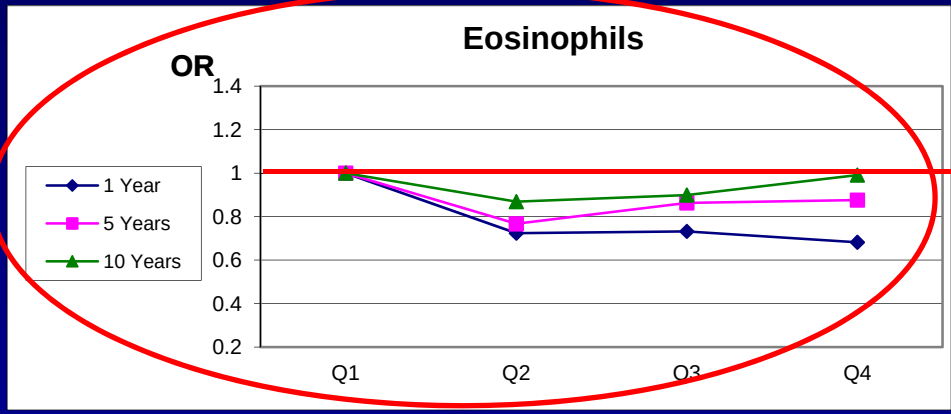


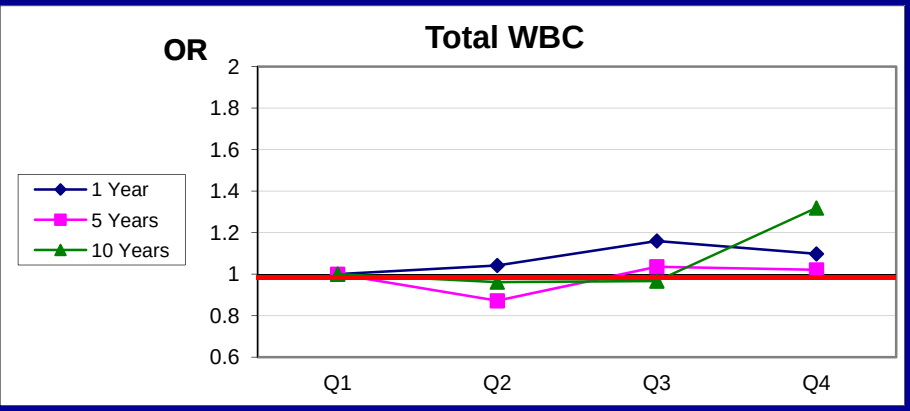
Results$_2$ – WBC Q and mortality risk, adjusted for SAMI score

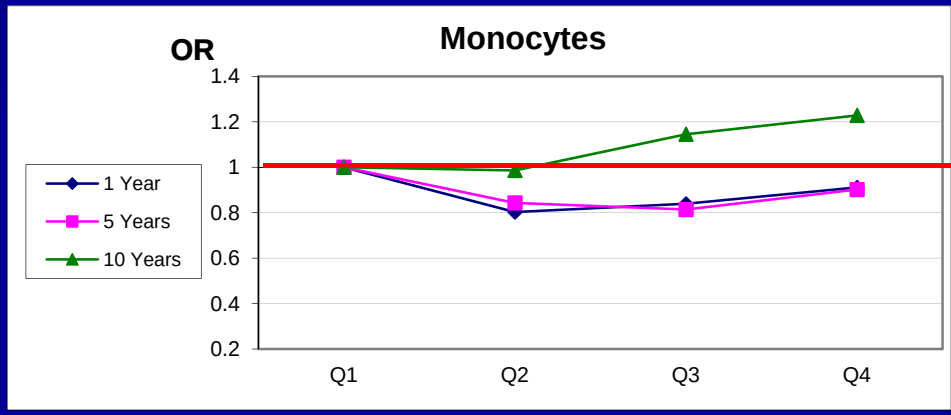












Results$_3$ - Incremental value of WBC over SAMI

Score	ROC
SAMI	0.881
SAMI + Lymphocytes	0.883
SAMI + Eosinophils	0.882
SAMI + NLR	0.882

Conclusions

1.NLR, Lymphocytes (strongest) and Eosinophils are inexpensive, universally available independent markers of post AMI mortality

2.The latter have minimal incremental prognostic ability to the SAMI score, that diminishes as follow up period increases

Index Scale - Parameters and Weights

Parameter		Weight
Age	65-75 years / 75+ years	1 / 3
During Hospitalization:		
Blood Tests	Hyponatremia	1
	Hyperkalemia	1
Echocardiography	Left Ventricular Dysfunction *(Severe)*	2
	Left Ventricular Hypertrophy *(Concentric or Significant)*	2
	Mitral Regurgitation *(Moderate or Severe)*	3
	Pulmonary Hypertension *(Moderate or Severe)*	2
Intervention	CABG / Other Reperfusion	-4 / -2

*If echocardiography wasn't performed, add **1 Point** and ignore these parameters:*

Index Scale - Parameters and Weights

Parameter	Weight
At discharge: Groups of Diseases	
Old Myocardial Infarction	1
Renal Diseases	1
Obesity	-1
Gastro-Intestinal Bleeding	3
Anemia	1
COPD	2
Malignant Neoplasm	3
Alcohol or/and Drug Addiction	3
Neurological Disorders	3
Schizophrenia or Psychosis	3