coefficient 0.86 from the map set. The optimal ANN configuration was with 3 neurons in the hidden layer. The difference among the three ROC curves resulted statistically significant.

Conclusions: An ANN-based CPR performs better in the clinical prediction of PE than classical rules without increasing the number of items required for the analysis.

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Association of electronic order set usage for heart failure and early post hospital outcomes

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Background: Care pathways and electronic medical records (EMR) have been advocated for use in management of acute heart failure. We sought to determine the clinical impact of a specifically designed hospital order set for acute heart failure.

Methods: Data from a metropolitan hospital group for all unique hospitalizations with a primary diagnosis of acute heart failure from January 2010 to December 2012 were reviewed. An electronic chart was universally employed for all ordering and testing functions. The heart failure order set was created by a multidisciplinary team and tested for compatibility within the EMR by dedicated personnel.

Elements in the order set (in addition to routine admission orders) included items and reminders relating to standard medical treatments as well as discharge planning and post discharge follow up. All clinical orders and results were recorded in the EMR and interrogated for this study.

Results: During the study period, 8,955 electronic charts were reviewed with a primary diagnosis of acute heart failure. The electronic order set was utilized in 705 cases and was associated with cardiac in-hospital mortality, 30 day readmission rate, and 30 day readmission rate. After adjustment for demographic and clinical variables, there persisted significantly lower 7 and 30 day composite clinical (mortality plus all cause readmission) outcome rates, driven by events occurring in the first 7 days post discharge.

Conclusion: Introduction of an electronic heart failure order set within the context of a hospital care pathway record is associated with lower early rehospitalization and mortality, primarily driven by outcomes in the first week post discharge. Further studies are warranted to evaluate the impact of a larger implementation of this order set.

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The wealth of nations and the dissemination of cardiovascular research

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Aims: This study aimed at understanding whether investigators from less wealthy countries were at a disadvantage in disseminating their research, after accounting for potential differences in research quality and infrastructure.

Methods and results: In this bibliometric analysis a representative random selection of 10% (n=1062 studies) of all abstracts submitted to the European Society of Cardiology (ESC) congress 2006 from September 2006 to December 2011. The main variable of interest was the per-capita gross domestic product (GDP) of the country of the principal investigator. Using multivariable models that adjusted for socioeconomic indicators and previously identified markers of research quality, we examined the relationship between per-capita GDP and three study endpoints: Acceptance at the ESC congress, full-text publication, and number of two-year citations. Among 1062 abstracts from 63 countries, per-capita GDP was positively correlated with all three study endpoints. After adjustments for markers of research quality and infrastructure, per-capita GDP remained a strong predictor for acceptance at the ESC congress (adjusted OR for every 10,000 USD increase in per-capita GDP 1.44; 95% CI, 1.15 to 1.80), full-text publication within 5 years (adjusted OR 1.49; 95% CI, 1.17 to 1.90), and high citation frequency (adjusted OR 2.30; 95% CI, 1.31 to 4.04). These findings were largely consistent in a subgroup of abstracts of high-quality, prospective clinical trials.

Conclusion: Investigators in less wealthy countries face challenges to disseminate their research, even after accounting for potential differences in the quality of their work and research infrastructure.

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Association between endothelial shear stress and neointimal formation in bioresorbable vascular scaffolds. An OCT study

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Purpose: Several studies in the past have investigated the association between local endothelial shear stress (ESS) patterns and neointimal formation in bare metal anddrug eluting stents. However, no study to date has evaluated the effect of ESS on neointimal development following a bioresorbable scaffold implantation. The aim of this analysis is to investigate the impact of the local hemodynamic environment on neointimal formation following an Absorb bioresorbable vascular scaffold (Absorb BVS) implantation.

Methods: Twelve patients with an obstructive lesion in a relatively straight arterial segment were implanted with Absorb BVS and investigated with optical coherence tomographic examination at baseline and 1 year follow-up were included in the current analysis. The optical coherence tomographic data acquired at follow-up were used to reconstruct the luminal surface of the scaffolded segment at baseline and 1 year follow-up. Blood flow simulation was performed on the luminal surface at baseline defined by the Absorb BVS struts and the ESS was estimated and related to the neointimal thickness measured at 1 year follow-up.

Results: Low ESS was noted at baseline, as 61% of the measured ESS were <1Pa. The ESS was higher on the top of the struts and low in between the struts areas where recirculation zones were also seen. The percentage scaffold obstruction at 1 year follow-up was 13.1±6.6% and the mean neointimal thickness was 113±45 μm. A statistically significant correlation was noted in all the studied patients between the logarithmic transformed ESS at baseline and the neointimal thickness at 1 year follow-up (average: R2 = 0.451; range: -0.140 to 0.662; P < 0.0001). Mixed linear regression analysis between the baseline logarithmic ESS and neointima thickness at follow-up yielded a slope of -31 ±1 mmHgPa and a y-intercept of 99 ±u m.

Conclusions: We found a statistically significant inverse association between ESS and NT in all the studied segments. These findings underscore the role of the local hemodynamic milieu on neointimal response and should be taken into consideration in the design of bioresorbable devices.

Abstract P244 – Table 1. Adjusted 7 and 30 day outcomes according to heart failure order set use

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Order set use</th>
<th>7 Day Readmission</th>
<th>7 Day Readmission/mortality</th>
<th>30 Day Readmission</th>
<th>30 Day Readmission/Mortality</th>
<th>Hospital Length of Stay</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.67 (0.52–0.87)</td>
<td>0.54 (0.37–0.80)</td>
<td>0.72 (0.57–0.95)</td>
<td>0.70 (0.63–0.99)</td>
<td>0.59 (0.48–0.73)</td>
</tr>
</tbody>
</table>

Odds Ratio (95% CI)