THE PROMISE OF CONTINUOUS TRANSDERMAL CARDIAC INJURY BIOMARKER MONITORING DURING PCI: FIRST REAL-WORLD EXPERIENCE

Josiah Brown MD, Suhail Dohad MD, Ronald Karlsberg MD
Cardiovascular Research Foundation of Southern California, Los Angeles, CA, USA,
Cedars-Sinai Smidt Heart Institute, Los Angeles, CA, USA

BACKGROUND

Cardiac biomarker monitoring during PCI lacks real-time data. We tested a novel transdermal infrared wearable sensor that continuously measure injury biomarkers non-invasively.

METHODS

We studied 5 patients with stable CAD and 15 with ACS undergoing PCI. The transdermal sensor (RCE™) gathered data every 3 minutes during the procedure until 4h post-op. Readings were compared with serum troponin-I levels drawn at the beginning and conclusion of the case. Sensor data was correlated with procedural details and troponin levels.

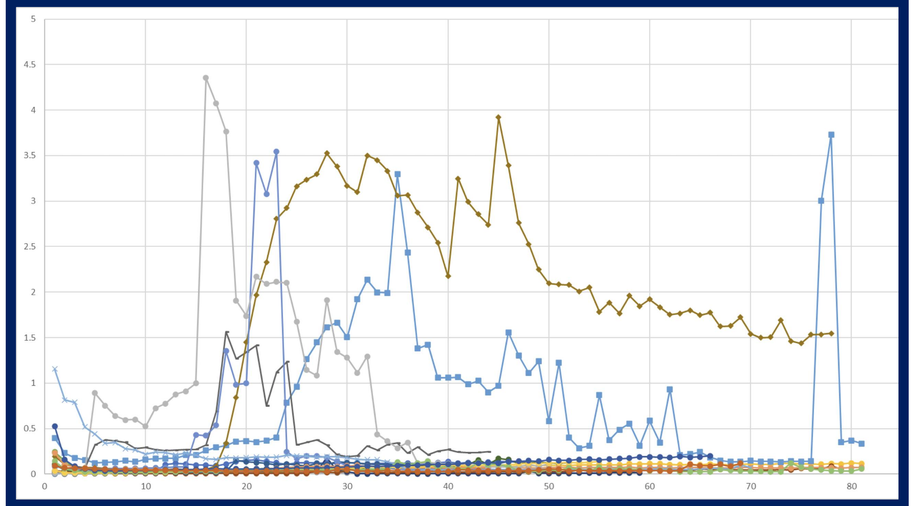
RESULTS

The sensor detected real-time biomarker changes that were concordant with PCI-related cardiac insults. 5 of the 20 cases demonstrated a remarkable rise of the signal from baseline and are shown here.

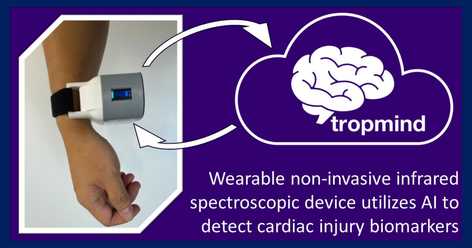
CONCLUSION

Continuous transdermal cardiac injury biomarker monitoring during PCI is feasible and reflects important procedural events. Further investigation is important to understand the generalizability of the signal and help evaluate the utility of continuous monitoring in and out of the cath lab.

Continuous non-invasive cardiac biomarker monitoring during PCI reflects procedure-related cardiac insults and shows promise for widespread applications



Non-invasive cardiac injury biomarker monitoring in 20 patients undergoing angiography and PCI

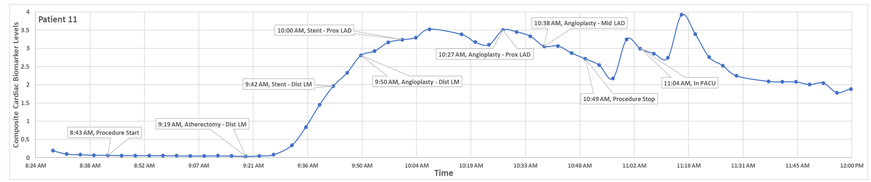


Wearable non-invasive infrared spectroscopic device utilizes AI to detect cardiac injury biomarkers

ACC.24

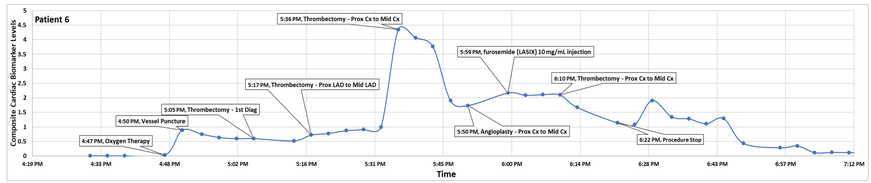
For more information or questions please contact Josiah Brown at josiahnb@gmail.com

Case Example #1



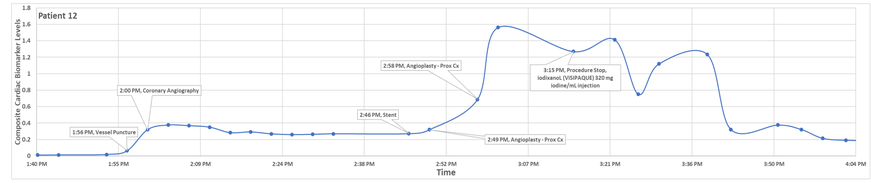
Left-main PCI with intravascular lithotripsy

Case Example #2



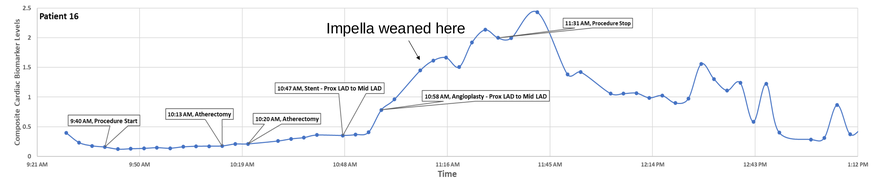
STEMI with LAD thrombectomy complicated by thrombus embolization to the LCX

Case Example #3



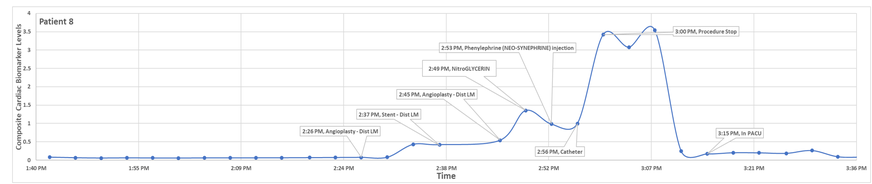
PCI to heavily-calcified ostial LCX

Case Example #4



Impella-supported orbital atherectomy and PCI of LAD.

Case Example #5



Left main PCI

No significant disclosure from any of the authors involved