Western Surgical Association
2020 Annual Meeting
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– Virtual Meeting –
www.westernsurg.org | wsa@lp-etc.com | 913.402.7102

**Q 5. ASSOCIATION OF A NON-INVASIVE FIBROSIS MARKER AND POST-OPERATIVE LIVER FAILURE AFTER RESECTION OF COLORECTAL LIVER METASTASIS**

Presenter: Yazan Ashouri MBBS | University of Arizona
*Y Ashouri, M Hamidi, M El Ghouayel, R Turk, L Konstantinidis, F Maegawa, V Nfonsam*

**Background**: Chemotherapy-associated liver injury (CALI) increases the risk of postoperative liver failure (POLF) after resection of colorectal liver metastases (CRLM). The role of non-invasive fibrosis markers in this setting is not well established.

**Methods**: The National Surgical Quality Improvement Program (NSQIP) database was utilized to identify patient who received neoadjuvant chemotherapy and underwent subsequently hepatectomy for colorectal liver metastases between 2014-2017. Patients were stratified into two groups using the Aspartate-to-Platelet Index ratio (APRI) of 1.0 as a cut off value.

**Results**: A total of 2816 patients were identified, of whom 165 had APRI score > 1.0. Patient with APRI > 1.0 were younger, less frail, and had a lower American Score of Anesthesia (ASA) class compared to patients with APRI score ≤ 1.0. However, they had a longer length of stay (6 vs 5 days, P=0.0002), a higher rate of postoperative bleeding (25.5% vs 16.6%, P = 0.003) and POLF (9.1% vs 4.3%, P = 0.004). The multivariable logistic regression showed that APRI > 1.0 was independently associated with POLF, Odds Ratio (OR): 2.21, 95% Confidence Interval (CI):1.24 - 3.93. Likewise, major hepatectomy was associated with POLF, OR: 4.32, 95% CI: 2.86 - 6.26. APRI score > 1.0 was also independently associated with postoperative bleeding and unplanned readmission, OR: 1.82, 95% CI: 1.02-2.75 and OR: 1.59, 95% CI: 1.02-2.48, respectively. The Receiver Operating Characteristic curve analysis showed that APRI > 1.0 was a better predictor of POLF than MELD score, with an Area Under the Curve (AUC): of 0.608 vs 0.542, P < .0001, respectively.

**Conclusion**: APRI > 1.0 was independently associated with POLF, postoperative bleeding and unplanned readmission after hepatectomy for colorectal liver metastases. When compared to MELD score, APRI> 1.0 was a better predictor of POLF.