Computed tomography liver spleen ratio as predictive marker of liver injury among adult Filipina early breast cancer receiving neoadjuvant therapy from 2010-2016: A six-year retrospective study

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Aim: There is no way of predicting, who among our early breast cancer patients develop liver injury during neoadjuvant treatment. It is our aim to determine such event by determining Computed tomography liver spleen ratio (LS ratio) and comparing it to liver function test.

Methods: Retrospective review in the Philippines for Stage I-III invasive breast cancer. Computed tomography LS ratio was reviewed by one radiologist. LS ratio cut off values were tested of their accuracy in terms of sensitivity, specificity, negative and positive predictive values wherein a computed AUC of >0.70 is considered significantly valid predictive markers.

Results: We had 35 patients with average age of 53.91 years old, 57% had stage III-B cancer. Patients’ average liver spleen ratio was 1.10±0.30 at the start, then, it slightly increased towards the end of the treatment (1.13±0.32). SGPT (37.43 to 35.09, p=0.479) changed from start to end of treatment. There are higher rates of liver injury at the start of treatment. Liver spleen ratio is significantly correlated with SGPT (r= -0.541, p=0.001). At end of treatment, LS ratio is correlated with SGPT (r=-0.464, p=0.005). LS ratio has higher sensitivity at start of treatment 100% at cut off 0.52, while at end of treatment the cut off was 0.87 has higher sensitivity (100%) in predicting liver injury. Liver spleen ratio at the end of treatment showed higher accuracy (AUC=0.597) indicating the LS ratio can be utilized as marker for predicting liver injury.

Conclusion: End of treatment, liver injury was seen in those receiving anthracycline-based regimen. Liver spleen ratio is significantly correlated with SGPT. Liver spleen ratio at the end of treatment showed higher accuracy indicating the LS ratio is utilized as marker for predicting liver injury.