

INTRODUCTION

Hepatocellular carcinoma (HCC) has an increasing incidence and mortality rate. The current prognostic tools used to assess HCC severity pre-operatively have failed to mitigate the spread. Therefore, there is an urgent need to determine an accurate predictor of HCC prognosis. Red cell distribution width (RDW) is a readily available lab value included on all CBCs conducted before, during, and after the transplant admission.

- ❖ Our objective was to determine the relationship between RDW elevation and patient outcomes.
- ❖ We hypothesized that elevated red cell distribution width (RDW) can be predictive of advanced HCC stage at time of liver transplantation.

METHODS

We performed a retrospective cohort study of all consecutive adult orthotopic liver transplant (OLT) patients from January 1, 2012 through December 31, 2016. Only patients who were diagnosed with incidental or pre-operative HCC were studied.

- ❖ The difference in continuous variables across compared groups was assessed using the Mann-Whitney U test and were reported as a mean \pm standard deviation. Binary variables were compared using chi-square test.
- ❖ Spearman's correlation was used to assess correlation between pre-transplant RDW and presence of HCC in liver explant.
- ❖ ROC curve was used to determine sensitivity and specificity.
- ❖ Kaplan Meier with log-rank test was used for time to event analysis.
- ❖ Statistical significance was set at 5% for all comparisons.
- ❖ Analysis was done using SPSS 23.

RESULTS

389 adult orthotopic liver transplants (32.4% HCC); N=126

Table 1. Spearman Correlation

RDW	Pre-Transplant	30 Day	6 Month	1 Year
HCC Explant	.018	.287	.786	.369

Figure 1. ROC Curve

Test Result Variable(s)	Positive if Greater Than or Equal To ^a	Sensitivity	1 - Specificity
RDW_PRETX	13.950	.792	.500
	14.050	.778	.500
	14.150	.764	.400
	14.250	.736	.400
	14.350	.708	.400

Table 2. Recipient Characteristics

Recipient Characteristics (N=126)	Pre-Transplant RDW < 14.2 (N=37)	Pre-Transplant RDW \geq 14.2 (N=89)
Race		
White	27 (73.0%)	74 (83.1%)
Black	0 (0.0%)	5 (5.6%)
Hispanic	8 (21.6%)	9 (10.1%)
Other	2 (5.4%)	1 (1.1%)
Gender		
Male	33 (89.2%)	69 (77.5%)
Female	4 (10.8%)	20 (22.5%)
Mean Age	59.7 \pm 6.0	59.8 \pm 6.8
Mean LOS	12.4 \pm 15.1	10.8 \pm 6.5
Mean BMI	29.8 \pm 5.4	29.8 \pm 4.8
Mean CIT	5.2 \pm 1.8	5.5 \pm 1.8

Table 3. Pre-OLT RDW and Explant HCC

Pre-transplant RDW and Explant HCC (N=126)	Pre-Transplant RDW <14.2 (N=37)	Pre-Transplant RDW \geq 14.2 (N=89)	P=
Explant with HCC	28 (75.7%)	82 (92.1%)	.026
Explant without HCC	9 (24.3%)	7 (7.9%)	
Pre-Treatment (TACE, RFA, Y90)	32 (86%)	64 (72%)	.169
Mean # of explant tumors/lesions	1.03 \pm .96	1.91 \pm 4.72	.009
HCC in Explant/RDW Overall Patient Survival	89.3%	87.8%	.959

CONCLUSION

Our research demonstrates a statistically significant correlation between pre-OLT RDW value > 14.2 and presence of HCC in the explant pathology. In addition, there was a significant correlation between pre-OLT RDW and mean number of explant tumors/lesions. Our findings are retrospective from a single center, thus limited. Future multicenter collaborations are essential to further validate these conclusions.

REFERENCES

1. Howell J, Pinato DJ, Ramaswami R, et al. Integration of the cancer-related inflammatory response as a stratifying biomarker of survival in hepatocellular carcinoma treated with sorafenib. Oncotarget. Feb 14 2017.
2. European Association For The Study Of The L, European Organisation For R, Treatment Of C. EASL-EORTC clinical practice guidelines: management of hepatocellular carcinoma. J Hepatol. Apr 2012;56(4):908-943.
3. Zhao T, Cui L, Li A. The significance of RDW in patients with hepatocellular carcinoma after radical resection. Cancer biomarkers : section A of Disease markers. Mar 04 2016;16(4):507-512.

ACKNOWLEDGMENT

