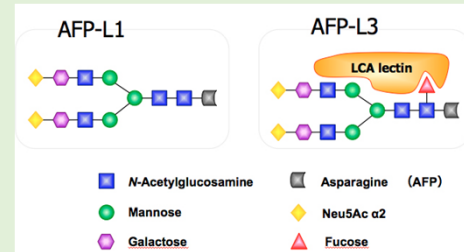


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Background

- Hepatocellular carcinoma (HCC) is the 4th most common cancer and the 3rd leading cause of cancer mortality in Singapore.
- Early detection of HCC through surveillance has been shown to improve outcomes.
- Serum alpha-fetoprotein (AFP) is used in HCC surveillance but is also elevated in other non-HCC situations.
- AFP comprises of 3 subfractions differing in the carbohydrate side chains.
- The L3 subfraction has a fucosylated side-chain resulting in an affinity for lectin.



- Lectin-reactive AFP i.e. AFP-L3, is associated with HCC whereas AFP-L1 is related to benign inflammation of the liver
- AFP-L3 is measured as a percentage of the total serum AFP and has been shown to be useful for the detection of HCC.

Objectives

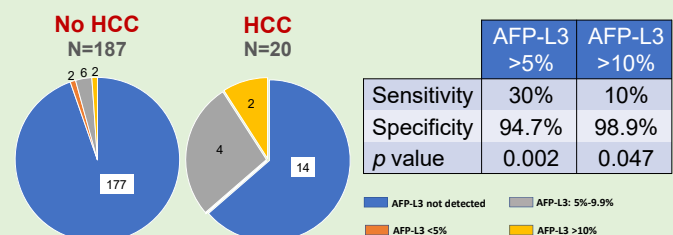
- The current recommended cut-off of AFP-L3 for HCC detection is 10% but there is a consideration that 5% may be a better cut-off for HCC surveillance.
- We conducted a prospective study with the objectives of (i) assessing if AFP-L3 is useful in the surveillance for HCC in at-risk populations in Singapore and (ii) if an AFP-L3 cut-off of 5% performs better than the current recommended cut-off of 10%.

Materials and Methods

- Patients who were undergoing 6-monthly HCC surveillance in SGH Dept of Gastroenterology and Hepatology between Dec 2017-Oct 2018.
- Study sera were collected at time of surveillance imaging for up to 3 visits.
- Usual HCC surveillance continued thereafter.
- Sera were tested with μ TASWako AFP-L3 assay on μ TASWako i30 automated analyzer with a lower detection quantification of 0.3 ng/mL which corresponds to AFP-L3 of <0.5%.

Results

- Cohort of 207 patients
- Median age 59 yrs (IQR 52-67), 55.1% males
- 72.9% chronic hepatitis B
- Median follow up 49.6 months
- 20 patients developed HCC with median time 20.5 months between study serum and HCC.



CONCLUSIONS

- For the first time in Singapore, it has been shown that AFP-L3 measurement is useful for HCC surveillance as an added impetus to exclude HCC in view of its high specificity if elevated.
- AFP-L3 cut-off of 5% has a higher sensitivity (30% vs 10%) and significance level (p value 0.002 vs 0.047) with similar high specificity for HCC detection compared to a cut-off of 10%. It is prudent to revise AFP-L3 cut-off to 5%.