

# **No difference in recurrent hepatocellular carcinoma rates in liver transplanted patients receiving mTOR inhibitors compared to non-mTOR group**

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# Objectives

Mammalian Target of Rapamycin (mTOR) inhibitors act as an immunosuppressant and indicated against HCC recurrence in LT patients. The efficacy of mTOR inhibitors in preventing HCC recurrence remains debated.



## Evaluating Impact

Assess the effect of mTOR inhibitors on HCC recurrence post-liver transplantation

01



## Identifying Key Factors

Determine the right patients, timing, and conditions for mTOR inhibitor use after LT

02



## Developing Guidelines

Establish evidence-based guidelines for preventing HCC recurrence with mTOR inhibitors after LT.

03

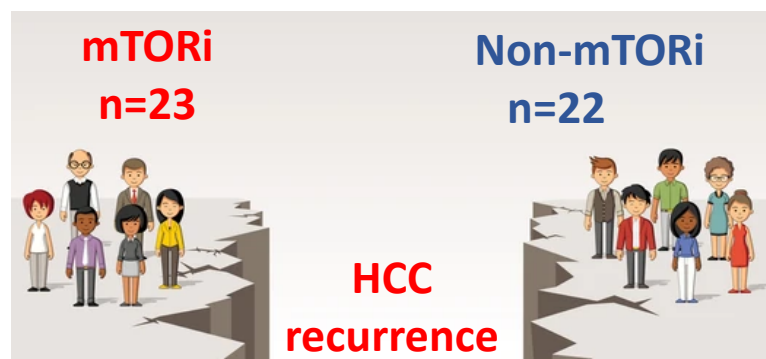
## Limitations of Study

It should be noted that the allocation process did not involve true randomization and economic limitations also restricted the range of data collection



- The study retrospectively analyzed a cohort of 45 patients with a history of hepatocellular carcinoma (HCC) who underwent liver transplantation (LT) between 2011 and 2023 at the First Central Hospital of Mongolia (FCHM).

## STUDY GROUPS (n=45)



## STUDY DATA

	Pre LT	Post LT
<b>AFP</b>	+	+ (MostRecent)
<b>PIVKA II</b>	+	+ (MostRecent)
<b>Contrast CT</b>	+	+ (MostRecent)
<b>Histology</b>	Evaluated to determine the extent of HCC spread at the time of LT	



**Study Setting:** The operations were performed at FCHM, a leading Mongolian medical institution specialized in liver diseases and transplantation.



**Milan Criteria:** The decision to proceed with LT was based on the Milan criteria



**Statistical Analysis: Student's t-Test:** ( $p < 0.05$ ) Results were presented as mean values  $\pm$  standard deviation (SD)



**Ethical Considerations:** The study was approved by the institutional review board (IRB) of FCHM. All patient data were anonymized to ensure confidentiality and compliance with ethical standards.



# RESULTS

	mTORi group (n=23)	Non-mTORi group (n=22)
Male : Female	14:9	15:7
Age (years)	52.7 (37-65)	47.4 (35-63)
AFP	59.66 ±42.84	386.94 ±368.17
PIVKA II	1951.31 ±1365.8	6,349.93 ±6,000.85
Viral infection;		
HBV-HCC	2	1
HCV-HCC	3	0
HBV, HCV co-infection HCC	1	1
HBV/HDV HCC	15	18
HBV/HDV, HCV HCC	2	1
HBV/HDV ALC HCC	0	1
<b>Recurrence HCC</b>	<b>2</b>	<b>1</b>

AFP- alfa-fetoprotein; PIVKA-II-Protein Induced Vitamin K-II; HCV- Hepatitis C virus; HBV-Hepatitis B virus, HDV-Hepatitis delta virus; HCC-Hepatocellular carcinoma



## RECURRENCE

Overall recurrence- 6.67%:  
mTORi-8.7% and non-mTORi-  
4.55% (p=0.28)



## TIME

All three recurrences were  
detected within 24 months of  
the operation.



## PRE-LT Tx

There was no difference  
in number and mode of  
pre-LT bridging therapies  
(TACE or RFA) with  
regards to recurrence

# RESULTS



Ongoing research is needed to address the weaknesses identified in this study and to improve the overall outcomes and accuracy of the conclusions...



**Histological Confirmation Revealed That Two of the Three Recurrences Were Beyond the Milan Criteria (T3MN)**

**40.44 months**

Observation timeline of total patients with a history of hepatocellular carcinoma (HCC) who underwent liver transplantation (LT)

**16.22 months**

The average timeframe for mTOR inhibitor initiation after liver transplantation

The study did not include mTORi trough level measurements due to limitations in the reagent solution...

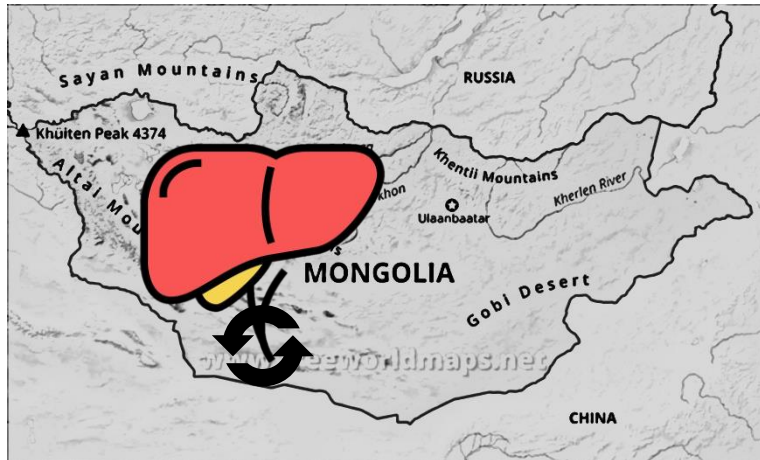


**In a mTORi Group; Everolimus+Tacrolimus trough dose was 0.25/0.25 mg/day**

# mTORi STUDY



**Adherence to the Milan criteria and application of pre-LT bridging therapies will keep the recurrence rate below 10%.**



**The mTOR inhibitor can be recommended to be started after one month of LT in patients with hepatocellular carcinoma beyond the Milan criteria**



**Any possible recurrence will be diagnosed within 24 months of LT operation. Administration of mTOR inhibitors can be stopped after 2 years as part of the physician-guided minimization of immune suppression regimen**

**Thank you**

**Teşekkürler**