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Systemic and Locoregional Synergy: Transarterial Chemoembolization Combined with TKIs and Immunotherapy

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INTRODUCTION

- Hepatocellular carcinoma (HCC) is a leading cause of cancer-related mortality, and its incidence is increasing.
- For unresectable HCC, double therapies with transarterial chemoembolization (TACE), tyrosine kinase inhibitors (TKIs), and immunotherapies are becoming increasingly common.
- Triple therapy with all three methods is relatively novel

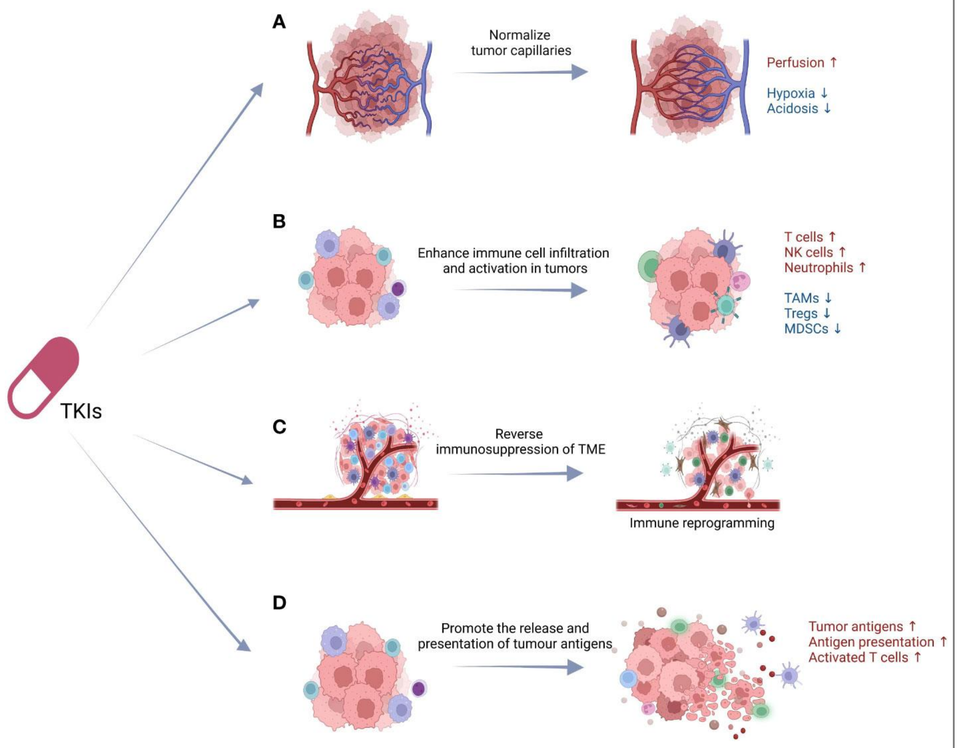

Figure 1: TKIs Impact on the Tumor Microenvironment, adapted from Liang et al.[8]

RESULTS

Retrospective trials have consistently demonstrated the increased effectiveness of triple therapy over double therapy[1-7]. The safety profiles were analyzed, and one 87 patient trial specifically examining adverse effects in triple therapy noticed zero deaths or serious adverse effects resulting from this treatment regimen[5].

Triple Therapy vs TKI + Immunotherapy

Objective Response Rate (ORR)	Progression Free Survival (months)	Objective Survival (months)	Study Design
63.0% vs. 29.6%, p < 0.001[1]	**8.4** vs 6.6, p = 0.115[1]	**26.9** vs. 24.2, p = 0.670[1]	Retrospective, 54 patients[1]
56.7% vs. 21.1%, p = 0.002[2]	**8.4** vs. 4.0, p = 0.0016[2]	**14.5** vs. 10.0 p < 0.0001[2]	Retrospective, 286 patients[2]
50.9% vs. 28.4%, p < 0.001[4]	**9.1** vs. 5.0, p = 0.005[4]	**19.1** vs 12.7, p = 0.002[4]	Retrospective, 104 patients[4]

Table 1, Outcomes from Studies Comparing Triple Therapy vs TKI and Immunotherapy

Triple Therapy vs TKI + TACE[3]

- Retrospective Study, 87 patients
- Median OS: 24.00 vs. 21.40 months, $p = 0.007$
- Median PFS: 9.70 *vs.* 7.00 months, $p = 0.017$

Triple Therapy vs TACE + ICI

No studies have directly compared these treatment combinations

CONCLUSIONS

Triple therapy in HCC is associated with a significantly higher tumor response rate and lower disease progression while maintaining a similar safety profile as double therapies. Additional prospective studies are warranted to inform future clinical guidelines and become adapted into treatment regimens.

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