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## Pilot study comparing the pharmacokinetics of sorafenib in the Asian-American population vs. Non-asian population in the treatment of hepatocellular carcinoma

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**Background:** Sorafenib is the only FDA approved agent that has been shown to prolong survival in unresectable hepatocellular carcinoma (HCC). The recommended dose is 400mg BID. Our anecdotal experience has shown that the majority of our Asian-American patient populations are unable to tolerate this recommendation. This is a pilot study aimed at evaluating a potential difference in pharmacokinetics (PK) of Sorafenib metabolism between the Asian-American (AA) and Non-Asian (NA) patient population.

**Methods:** A cohort of 23 patients completed the study. The PK of Sorafenib and its main metabolite M-2 were analyzed at 0, 1, 2, 4, 9 and 12 hours respectively. A subset analysis comparing high dose (>400mg daily) vs. low dose (≤400mg daily), high body surface area (BSA>1.9) vs. low body surface area (BSA≤1.9) and AA vs. NA patients was preformed.

**Results:** 18 patients were in the low dose cohort with 2 mortalities (749 and 283 days) and 1 patient achieving complete response (201 days). There were no deaths in the high dose group. There were no significant differences in the PK of Sorafenib and M-2 between the high and low dose groups nor the high and low BSA groups. Despite the difference in dose, the mean Sorafenib AUC and Cmax of the low dose group was at least 70% of the high dose group at steady state. Furthermore, the mean Sorafenib AUC and Cmax of the low BSA cohort was at least 75% of the high BSA group at steady state. There were no significant differences in the PK between the AA and NA groups.

**Conclusions:** Our analysis reveals a trend towards comparable PK of Sorafenib and M-2 metabolite despite lower doses and lower BSA. These findings suggest that a lower, more tolerable dose of Sorafenib in AA patients may not compromise drug efficacy. Large, population based studies are needed to validate these findings.

Cohort	Sorafenib AUC (mg*h/L)	Mean Difference (mg*h/L)	P-value
High Dose	42,729	11,415	NS
Low Dose	31,314		
High BSA	41,477	9,815	NS
Low BSA	31,662		
Non-Asian	37,914	9,471	NS
Asian-American	28,443		
Cohort	M-2 AUC (mg*h/L)	Mean Difference (mg*h/L)	P-value
High Dose	5,972	-348	NS
Low Dose	6,320		
High BSA	9,852	4,610	NS
Low BSA	5,242		
Non-Asian	7,961	3,949	NS
Asian-American	4,012		

### Biography

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