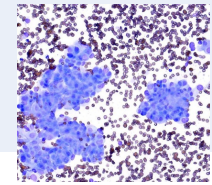
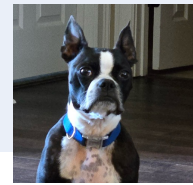


Hepatocellular Carcinoma in an 8-year-old Boston Terrier

By Drs. Kathy Mitchener and Guannan Wang



Background

Tenney, an 8-year-old Boston Terrier, presented in December 2023 for nausea, lethargy, elevated liver enzymes and anemia. He was diagnosed via ultrasound with diffuse infiltrative disease of the liver with a large mass effect in one lobe. The patient had prolonged coagulation times, so a biopsy was not performed. The patient received vitamin K therapy and two plasma transfusions to allow for multiple fine needle aspirates for cytology and SearchLight DNA testing. The mass was cytologically identified as a carcinoma. Differentials included primary hepatocellular carcinoma, biliary carcinoma or metastatic disease to the liver.

Vidium Searchlight DNA analysis

A fine needle aspirate from the liver mass was sent to the Vidium lab. SearchLight DNA testing revealed 9 mutation biomarkers and multiple lines of therapeutic options, including olaparib, carboplatin and sirolimus, targeting mutations in the double-strand DNA repair pathway genes (e.g. ATM and CHEK2) and the PI3K/mTOR pathway genes (e.g. PTEN).

Olaparib (PARP inhibitor) and carboplatin were recommended for Tenney as a first-line therapeutic approach, followed by sirolimus (mTOR inhibitor). The recommendation was based on the candidate driver status, published evidence to support the use of the medications in canine or human cancers, drug availability, as well as dosing, safety and toxicity data in dogs.

SearchLight DNA Report Excerpt

Therapeutic Biomarkers			
Treatment Options Based on Mutations			
Drug	Mutation	Available for dogs	Used in humans
everolimus	PTEN Copy Number Loss	No	Yes ³
olaparib	ATM Copy Number Loss	Yes	Yes ²
olaparib	CHEK2 Copy Number Loss	Yes	Yes ²
platinum-based chemotherapy	ATM Copy Number Loss	Yes	Yes ²
platinum-based chemotherapy	CHEK2 Copy Number Loss	Yes	Yes ²
sirolimus	PTEN Copy Number Loss	Yes	Yes ³

Drug Resistance-Associated Biomarkers		Pharmacogenomic Biomarkers	
Drug	Mutation	Gene	Mutation
-	-	ABCB1	No ABCB1-1Δ Mutation

Do you have a case you'd like to perform SearchLight DNA testing on? Please call (833) 794-0318 to connect with one of our clinicians or email us at info@vidiumah.com

Treatment

Tenney has been treated with carboplatin together with olaparib. He receives carboplatin intravenously every 28 days and takes olaparib orally on days 7 through day 27 of each cycle, which is given at home by the owner. Our goal for Tenney was to stabilize his disease and improve his appetite and quality of life. Tenney has received 5 monthly doses of carboplatin along with olaparib. He has had no side effects with the combination therapy.

Outcomes

Since the initiation of treatment, Tenney has shown stabilization of the disease without any progression or adverse side effects. His coagulation panels have normalized, and he is no longer anemic. His liver enzymes continue to decline, and he is eating well. He remains stable and continues to do well. We will continue his therapy as long as he tolerates the combination, remains stable and has a good quality of life.

Conclusion

In Tenney's case, SearchLight DNA provided critical therapeutic insights based on the identification of multiple druggable mutations. This led to the use of a treatment that has successfully controlled his disease. We hope to highlight this case to demonstrate the clinical utility of SearchLight DNA for our canine companions.

Clinician's Perspective

"In general, we felt that Searchlight DNA offers us options for potential therapy, support or confirmation for diagnosis. Tenney's case shows the potential benefit of genomically-guided combination therapy. Without it, Tenney would have lost his battle with his cancer. The owners have been afforded at least 5 additional months of good quality life and Tenney continues to improve at each subsequent chemotherapy visit. We are encouraged by these results and hopeful for many more than the 5 months we have already had!"

"I feel strongly that is what Searchlight affords meopportunities for my patients. Please share this case, SearchLight DNA makes a world of difference."

Dr. Kathy Mitchener

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