



Curbing Tumor Growth and Chemotherapy Resistance in Canine Hemangiosarcoma

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Hemangiosarcoma is a devastating and deadly tumor. Primarily affecting large breed dogs, the tumor grows quickly and spreads rapidly, with half of all dogs dying within four to six months of diagnosis even with treatment. Very few dogs survive more than one year. Prognosis has not changed in more than a decade, and new treatments are desperately needed.

Morris Animal Foundation-funded researchers at the University of Minnesota are looking at new ways to block tumor growth and spread by disrupting a key metabolic pathway. The team is expanding on their previous findings that identified a specific cell population in hemangiosarcomas that is more drug resistant to standard chemotherapy treatments than other cell populations. The team then worked to understand why these cells are more resistant. They discovered that some cancer cells survive chemotherapy because they are able to sequester drugs in special cellular compartments, effectively neutralizing the chemotherapy agent.

In their current project, the team is working to understand how to block this mechanism and better understand why some hemangiosarcoma cells use this process. The team is studying this effect in tumor cell cultures using a blocking agent, and they hope to complete studies in the next year. The blocking agent is a drug commonly used to treat certain forms of heart disease in dogs, and the team hopes to translate their findings from the bench to the clinic once they obtain more data.

Hemangiosarcoma is an incurable cancer that is almost uniformly fatal. If the team is successful in their investigations, the integration of this blocking agent into current chemotherapy protocols could improve the lifespan and quality of life for dogs with this disease, and represent an important advance in the treatment of hemangiosarcoma.