

**PURPOSE:** In radiological diagnoses, it is important to understand and interpret anatomical changes, specifically those observed in CT scans, which correlate with treatment plans. There are currently many anticancer agents, which affect tumor vasculature growth as well as normal organ vessel growth. Monitoring these effects with imaging may be useful to guide selection and dosing of different treatments. By observing perfusion of certain organs, it is possible to monitor vessel competency. In cases where perfusion is constant over time, it can be assumed that there is no significant change in vasculature, and thus no damage as an effect of chemotherapeutic agents. In contrast, significant changes in perfusion over time, may suggest decrease in normal vessel growth as a result of therapy.

**METHODS & MATERIALS:** Patients receiving the VEGF inhibitor sorafenib, underwent CT imaging every six weeks, beginning with a baseline study prior to treatment. A “jog scan” was used to track perfusion through the adrenal glands (chosen due to their significant fenestration). Sixteen pairs of adrenal images were obtained per jog scan, and manually contoured using a contouring program. Each of the sixteen scans represents different perfusion time intervals from 0-150 seconds. The mean pixel values of each gland were obtained, and these values were compared over time for any significant changes in pixel value, and thus change in vasculature perfusion over time.

**RESULTS:** The average change in maximum pixel values from baseline to six weeks after treatment initiation shows a change of 4.58% increase in peak pixel value for both adrenal glands.

**CONCLUSION:** The manual contouring of adrenal glands in conjunction with calculated maximum pixels values shows changes in adrenal perfusion between baseline and beginning therapy. The continued monitoring of perfusion could prove beneficial to the radiologic diagnosis of significant anatomical changes as a result of continuous chemotherapy.