Bupivacaine is an amino amide anesthetic that decreases current amplitude and inhibits whole cell K+ currents in Ca2+-activated K+ channels and N-type voltage-gated (Kv1/Shaker and Kv3/Shaw [KCNA and KCNC]) K+ channels. Bupivacaine also inhibits voltage-gated Na+ channels and tandem pore domain (TASK-2/KCNK-5) K+ channels. Bupivacaine may be neurotoxic at high doses, activating p38 MAPK, increasing levels of ROS and WDR53, and inducing apoptosis in neuroblastoma cells. In other cellular models, bupivacaine induces depolarization of the mitochondrial membrane potential, resulting in apoptosis.

References


