On Cancer Recognition of Ultrasound Images

Abstract

An algorithm of cancer recognition of ultrasound images is developed in this paper. As we pointed out in our previous work, in order for cancer to survive it develops its own blood system supply, which is different than the supply of normal tissue. The velocity of the blood flowing through the cancerous blood vessels is different than the velocity of the blood flowing through blood vessels of normal tissue. Due to this fact the ultrasound signal is absorbed differently in the cancerous areas than in the normal tissue areas. The energy of the signal, the continuity of the signal, the auto-correlation function, and the frequency domain properties are different in the normal tissue than in cancerous tissue. All these indicators are waited here for the purpose of classifying the image of the tissue as being cancerous or non-cancerous. Preliminary results based on limited number of ultrasound images show that our method has the ability to recognize cancer in ultrasound images.