Organ transplantation

The classical definition of human death, based on the statement of the definitive cessation of blood circulation, is still in use except the cases, where the death took the brain, but the blood circulation remained active for some time. In these cases, a “new definition of death” based on the statement of brain death, should be used. The diagnosis of brain death is made by performing of clinical tests and ancillary investigations in order to confirm patient's irreversible coma, lack of brainstem reflexes, lack of motor activity and apnea. Brain death results from the massive damage of brain tissue caused by various pathological processes including the direct and indirect effects of xenobiotics poisoning. Patients who deceased due to poisoning can be donors of tissues and organs for transplantation [1].

The knowledge of the suitability of Hyperspectral and multispectral imaging (HMSI) cameras for accurate measurement of chemical properties of biological objects offers a good opportunity for the selection of the optimal imaging tool for specific medical applications, such as organ transplantation [2].

1)
Ciszowski K, Mietka-Ciszowska A. [Brain death and transplantological issues in patients deceased due to poisonings]. Przegl Lek. 2013;70(8):585-8. Review. Polish. PubMed PMID: 24466699.
2)
Mühle R, Markgraf W, Hilsmann A, Malberg H, Eisert P, Wisotzky EL. Comparison of different spectral cameras for image-guided organ transplantation. J Biomed Opt. 2021 Jul;26(7). doi: 10.1117/1.JBO.26.7.076007. PMID: 34304399.

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