



Diagnostics.

ADC map transformation procedure.

A research group from the Public Health System of Andalusia (SSPA) proposes a procedure to correct ADC maps obtained with magnetic resonance by presenting different values of b parameters through representative IVIM values.



Description

The DWI is a diffusion-enhanced magnetic resonance technique that allows to obtain representative parameters of the differences in water molecules diffusion capacity in the patient's tissues. **An ADC map** or diffusion map shows parametric images that contain the apparent diffusion coefficients (ADC) in the diffusion-weighted images (DWI). The ADC is a representative parameter of DWI, automatically calculated by the software with the IRM scanner.

Subsequently, they are shown as a parametric map that reflects the degree of water molecules diffusion through different tissues.

The DWI exploits the random movement of water molecules. The degree of tissue cellularity and the presence of an intact cell membrane helps to determine the resistance of water molecules diffusion; this can be evaluated quantitatively using the ADC value through the use of different values of b .

This technique is widely appreciated as an indispensable tool in the examination of the CNS, and is considered useful for the detection, characterization and differentiation of diseases, tumors and intracranial infections. However, there are currently discrepancies in their acquisition, due to the fact that **each hospital performs the acquisition of ADC maps using different values of b** from the ones used in other hospitals, promoting an incorrect comparison. This causes drawbacks in the research context and prevents the use of jointly quantitative studies.

This research group has made the correction of b -value in the acquisition in ADC maps through IVIM representative values. It is based on transforming a first map of a patient "ADC_a" into a second map "ADC_b" thereof, obtaining a first value b_{2a} similar to one that has been obtained by means of a second value b_{2b} . The procedure uses transformation functions that are applied to regions where IVIM model parameters are the representative values of this model.



Advantages

- There are no alternative products with these characteristics that solve the aforementioned problems.
- It could be integrated into any medical imaging tool oriented to magnetic resonance, allowing the comparison of results between different hospitals, in addition to many other applications.



Industrial Property

This technology is protected by national patent application.



Aims

The research group is looking for partnership and/or license agreement.



Classification

Area: Diagnostics / ICT - Information Technology - Bioinformatics.

Pathology: Oncology and hematology / Central nervous system.



<https://www.zinkinn.es/uso-de-imagenes-avanzadas-de-resonancia-magnetica-para-prediccion-de-respuesta-de-tumores>