**عنوان مقاله:**

Correlation between Kidney Function and Sonographic Texture Features after Allograft Transplantation with Corresponding to Serum Creatinine: A Long Term Follow-Up Study

**محل انتشار:**

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**خلاصه مقاله:**

Background: The ability to monitor kidney function after transplantation is one of the major factors to improve care of patients. Objective: Authors recommend a computerized texture analysis using run-length matrix features for detection of changes in kidney tissue after allograft in ultrasound imaging. Material and Methods: A total of ۴۰ kidney allograft recipients (۲۸ male, ۱۲ female) were used in this longitudinal study. Of the ۴۰ patients, ۲۳ and ۱۷ patients showed increased serum creatinine (sCr) (increased group) and decreased sCr (decreased group), respectively. Twenty run-length matrix features were used for texture analysis in three normalizations. Correlations of texture features with serum creatinine (sCr) level and differences between before and after follow-up for each group were analyzed. An area under the receiver operating characteristic curve (Az) was measured to evaluate potential of proposed method. Results: The features under default and ۳sigma normalization schemes via linear discriminant analysis (LDA) showed high performance in classifying decreased group with an Az of ۱. In classification of the increased group, the best performance gains were determined in the ۳sigma normalization schemes via LDA with an Az of ۰.۹۷۴ corresponding to ۹۵.۶۵% sensitivity, ۹۱.۳۰% specificity, ۹۳.۴۷% accuracy, ۹۱.۶۷% PPV, and ۹۵.۴۵% NPV. Conclusion: Run-length matrix features not only have high potential for characterization but also can help physicians to diagnose kidney failure after transplantation.

**کلمات کلیدی:**

Decision making, Computer-Assisted, Kidney Transplantation, Pattern Recognition System, Ultrasonography

**لینک ثابت مقاله در پایگاه سیویلیکا:**

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