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DEVELOPMENT OF AN AUTOMATED SYSTEM FOR VIDEO DERMATOSCOPY

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Introduction. The work is devoted to the development of an automated system for video dermatoscopy - a method that allows a visual assessment of the condition of the skin and the color and geometric characteristics of the skin formation to determine its nature and the risk of degeneration into a malignant form. Modern research methods require fast and reliable analysis of digitized video information [1, 2].

The aim of the work is to develop a complete digital video dermatoscopy system, justification for the use of basic modules and methodological support.

The results of the study. Based on the range of tasks to be solved, the modern digital dermatoscopy system includes:

- a digital optical image acquisition unit with a lens optical system and a digital camera;
- an interface module, including hardware and software for transmitting information to the data analysis subsystem;
- an image pre-processing module for correcting brightness and contrast and suppressing noise components in the image;
- image segmentation - the construction of the characteristic function of the image, highlighting the homogeneous region of objects and background;
- image descriptions - obtaining geometric and optical characteristics segmented in the previous module of objects.
- the formation of a preliminary diagnostic solution in which the analysis of the obtained characteristic features of the image is performed taking into account a priori and additional diagnostic information about the patient.

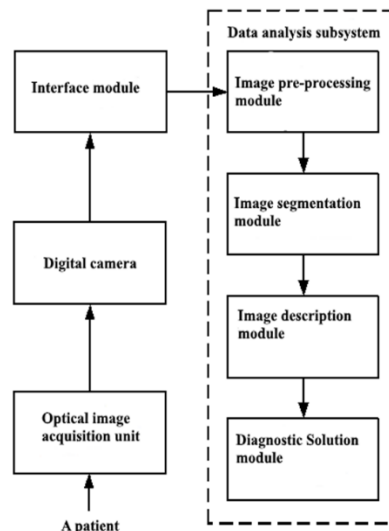


Figure 1. - The system of digital video dermatoscopy

Findings. In the tasks of automated processing of video dermatoscopic data, the perception of the field of view is associated with a priori information about the image under study. The main indicators of the effectiveness of the developed methods and systems are high stability and repeatability of recognition of skin objects and the ability to process images in real time. The prospect of work is the development of a complete system for digital video dermatoscopy and its subsequent preliminary clinical trials.

Bibliography.

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