



TELEDERMATOLOGY

CLINICAL EFFECTIVENESS EVALUATION OF THE AUTOMATED INTELLIGENT SYSTEM DIAGNOSTIC MODULE FOR SUPPORT IN MAKING MEDICAL DECISIONS IN DERMATOVENEROLOGY.

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Introduction: The automated diagnostic module is intended for automatic symptoms analysis of disease that physician inputs in system, allowing it to quickly build a list of possible diagnoses.

Objective: Assess clinical effectiveness of the automated diagnostic module of the developed intelligent medical decision support system in practical activity of a dermatovenerologist.

Material and Methods: Intelligent medical decision support system online module consists of separate sections which describe a patient's condition. Practicing dermatovenerologists conducted patient examination, and then input the disease symptoms into the diagnostic module, receiving a list of possible diagnoses. For the final diagnosis, all patients were subsequently examined by medical experts. Total 96 patients were examined.

Results: when evaluating the clinical efficacy of the diagnostic module intelligence in medical decision support system we analyzed frequency of matches of the final diagnosis established at internal consultation of dermatovenerologist-expert, and diagnosis of a medical practitioner, as well as the first three conclusions of the diagnostic module of the system. For the practicing physician, the percentage of correct diagnosis was 68.8%, with a 95% confidence interval from 60.7% to 76.9%. For automatic system diagnostic module the percentage of correct diagnosis was 82% with 95% confidence interval from 74.4% to 89.7%. Clinical efficacy of the diagnostic module was higher than the clinical efficacy of a medical practitioner, the differences were statistically significant, and we have ($p < 0.05$). When combined, work of a practicing physician and the system, the percentage of system correct diagnosis increased to 92.7% and the corresponding 95% confidence interval for the





probability of a correct diagnosis for the doctor and the system was in the range of 87.5% to 97.9% ($p < 0.05$).

Conclusions: Assuming the above, the co-operation of the medical practitioner and automated diagnostic system module, can significantly improve the clinical efficiency of the dermatovenerologist work.

