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CALCULATION INFORMATIVE INPUT DATA FOR THE DIAGNOSIS OF NEUROLOGICAL DISEASES.

For the diagnostics of neurological diseases (ND) is required to work up a large number of diagnostic values, which are characterized by multidimensionality and variety [1]. Tentative processing diagnostic information is based on formalizing input values [1] and the allocation plural diagnostically informative values. Informational content of values means in which measure this as a sign characterizing psychophysical condition of the patient, that is to say how it affects the diagnosis. We use traditional methods, which based on the dispersion, regression, correlation analysis [2].To construction the informative space ND processing special steps performed biomedical information [3]: medical information collection, formalization of values ND [1], primary processing of input data, classification and reduction of dimension of the space input values, selection of the most informative values, the synthesis of a diagnostic decision rule.

Assembling informative signs happen in three steps. First step is initial inspection of the patient. For there form inquiry and examination patient. Second step is clinical and laboratory research, such as clinical and biochemical analyses of blood, coagulation analyses and etc. And third step is neyrovisual research (MRI, ECG and etc). Primary diagnosis is based on the initial inspection of the patient. For the final diagnosis is necessary to conduct clinical and laboratory research. So, the most informative are clinical and laboratory and neyrovisual research.

For the decision the problem ND diagnosis was formed 7 groups Y_i ($i=\overline{0,6}$) with 50 people (healthy, patients with a diagnosis of epilepsy, etc.). All presented 350 histories of illness, which consisting of 89 analyzes $X=\{x_1, x_2, \ldots, x_{89}\}$ ($x_1 - x_{16}$ – complete blood count indicators, $x_{17} - x_{54}$ – blood chemistry indicators, etc). Data analysis in all the groups is excluded from consideration in the absence. After full inspection for groups Y_3 and Y_4 it was left 22 indicators of analysis: hemoglobin (x_1), red blood cells (x_2), etc.

To lower the input data dimension were analyzed all clinical and laboratory parameters of healthy and sick person. To detect dependencies between variables and the result (healthy - the patient) was performed correlation analysis.

For indicators analysis constructed correlation matrix between the groups: Y_0, Y_3, Y_4. It uses statistical packet SPSS 17.0.

The results of calculation are given in table.

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	…	x_{21}	x_{22}
x_1	1	0.06	0.5	0.2	0.39	0.16	0.47	…	0.7	0.64
x_2	0.06	1	0.17	0.07	0.23	0.31	0.1	…	0.2	0.27
x_3	0.5	0.17	1	0.8	0.66	0.89	0.8	…	0.83	0.98
x_4	0.2	0.07	0.8	1	0.66	0.84	0.73	…	0.9	0.93
x_5	0.39	0.23	0.66	0.66	1	0.69	0.78	…	0.88	0.96
x_6	0.16	0.31	0.89	0.84	0.69	1	0.74	…	0.84	0.93
x_7	0.47	0.1	0.8	0.73	0.78	0.74	1	…	0.84	0.92
…	…	…	…	…	…	…	…	…	…	…
x_{21}	0.7	0.2	0.83	0.9	0.88	0.84	0.84	…	1	0.91
x_{22}	0.64	0.27	0.98	0.93	0.96	0.93	0.92	…	0.91	1

According with the Student's t-test by significant correlation coefficients in the built matrix is identified.

Inference. For lowering of the dimension of the input space ND is necessary formed groups of closely interrelated indicators (clustering) and transition the input plurality ND to most laconic space by some converting of them. Also select the most informative signs. Besides, these actions aimed for improving the quality of computer diagnosis.

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