EXPLOITATION RESULTS OF MIS IMUNOLOG

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The software solution "Imunolog", presented in this paper, is developed after winning international project between University Hospital Alexandrovska, New Bulgarian University and Barcelona Medical University.

The fundamental initiative is to localize the main predispositions for this disease based on the statistic data from Bulgarian patients, the relationship between treatment and following manifestations of the disease, sequence of results from a concrete therapy and human body systems reactions and adaptation.

In our country there are no investigations and results, regardless of the enormous database of paper epicrysis, visits and anamnesis.

Systemic lupus erythematosus (SLE) is a widespread disease with unknown cause, which attacks person's immune system and injures the body's own organs and tissues.

We have addressed this problem and devised a software system for assessing both current lupus disease activity and changes in that activity since the patient`s last visit. Imunolog©® is retrospective database with strictly defined purpose objectives – to explore causes, treatment schemes, manifestations and reactions of all available patients in Bulgaria since 1960. It is a result of won international project between University Hospital Alexandrovska, New Bulgarian University and Barcelona Medical University.

Studies of the natural history of the disease and the effect of therapeutic intervention have been hampered by the lack of a satisfactory method of assessing disease activity. In particular there is no good way of evaluating changes in disease activity which could be used to compare studies from different centres.

Imunolog©® is organized collection, for storage and presentation of medical data and other knowledge for decision making, progress reporting, and for planning and evaluation of programs.

The American Rheumatism Association [16] developed a list of symptoms used to diagnose SLE. Research supports the idea that people who have at least four of the eleven criteria (not necessarily simultaneously) are extremely likely to have SLE. The criteria are:

- butterfly rash
- discoid rash
- photosensitivity
- mouth ulcers
- arthritis
- inflammation of the lining of the lungs or the lining around the heart
- kidney damage, as noted by the presence of protein or other abnormal substances called casts in the urine
- seizures or psychosis

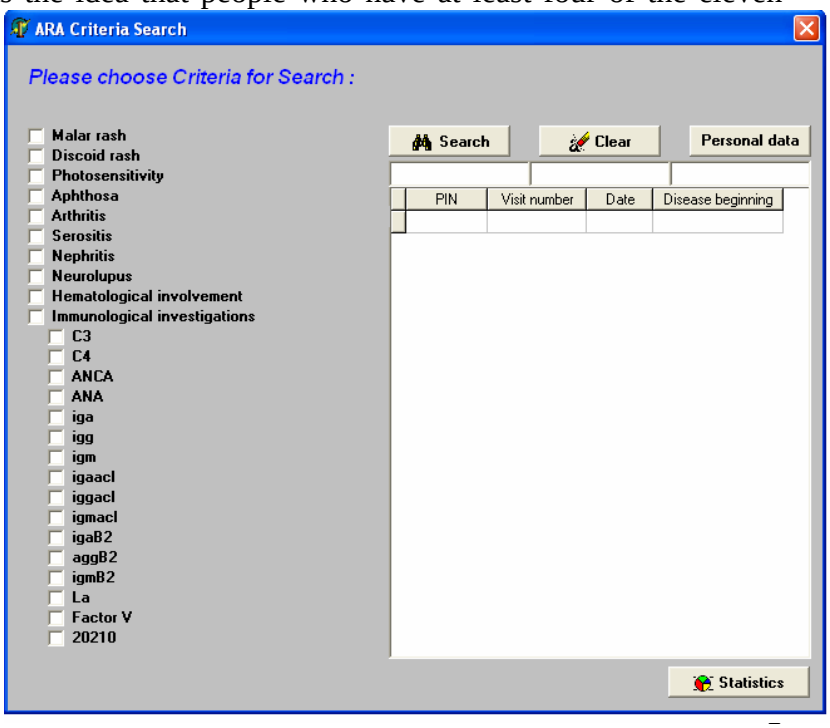


Figure 1 American Rheumatism Association developed symptoms for diagnosong SLE in MIS "Imunolog"

- the presence of certain types of anaemia and low counts of particular white blood cells
- the presence of certain immune cells, anti-DNA antibodies, or a falsely positive test for syphilis
- the presence of antinuclear antibodies

In MIS “Imunolog” they are presented within a menu – a part from the Electronic Health Record of each patient where the curing doctor enters the symptoms by ticking the presence.

We have a statistic review

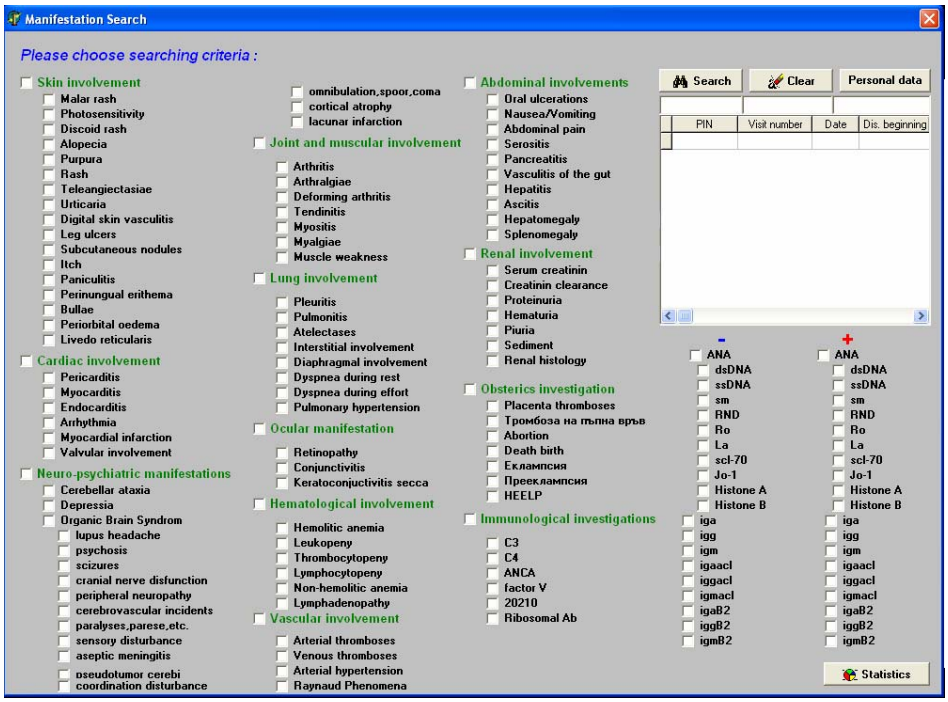


Figure 2 Manifestations screen of Imunolog

SLE has manifestations in every physiological system [14]:

- General Manifestations of SLE
- Psychological Manifestations
- Dermatologic Manifestations
- Musculoskeletal Manifestations
- Hematologic Manifestations
- Cardiopulmonary Manifestations
- Renal Manifestations
- Central Nervous System Manifestations
- Gastrointestinal Manifestations
- Ophthalmologic Manifestations
- Pregnancy
- Infection
- Nutrition

Each of them is in details described in Imunolog - Figure 2 Manifestations screen of Imunolog.

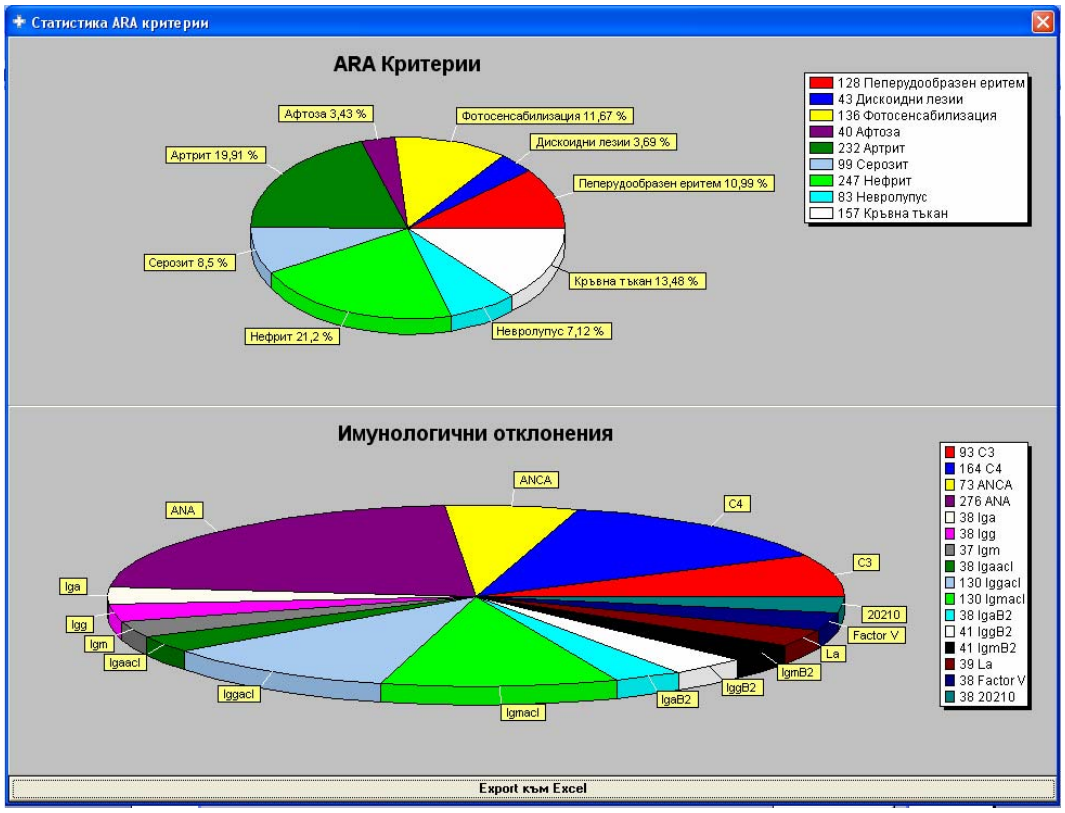
Whenever entered any data can be edited, again written or deleted. Only in the cases that finish with lethal end there is a system protection for editing. Then the records can only be viewed.

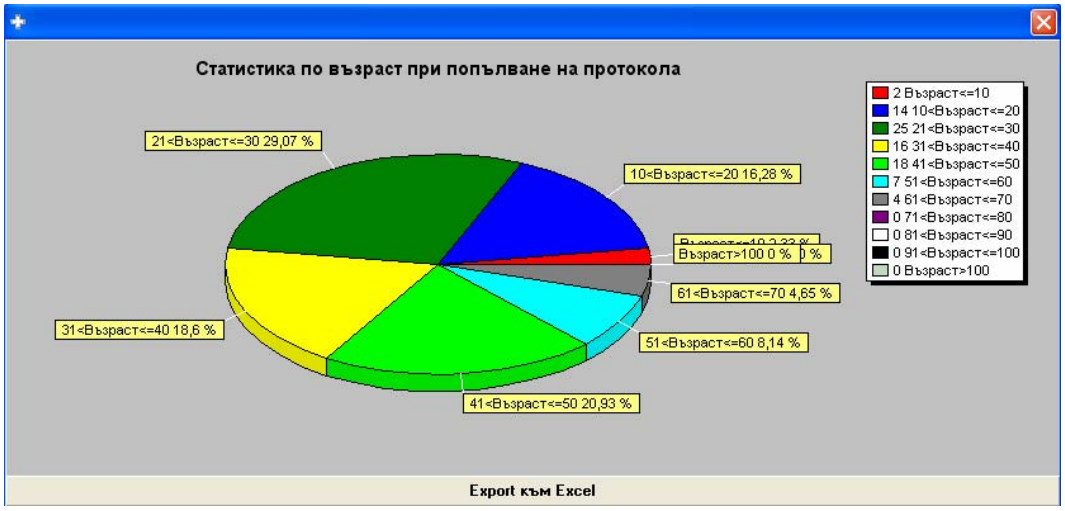
Results

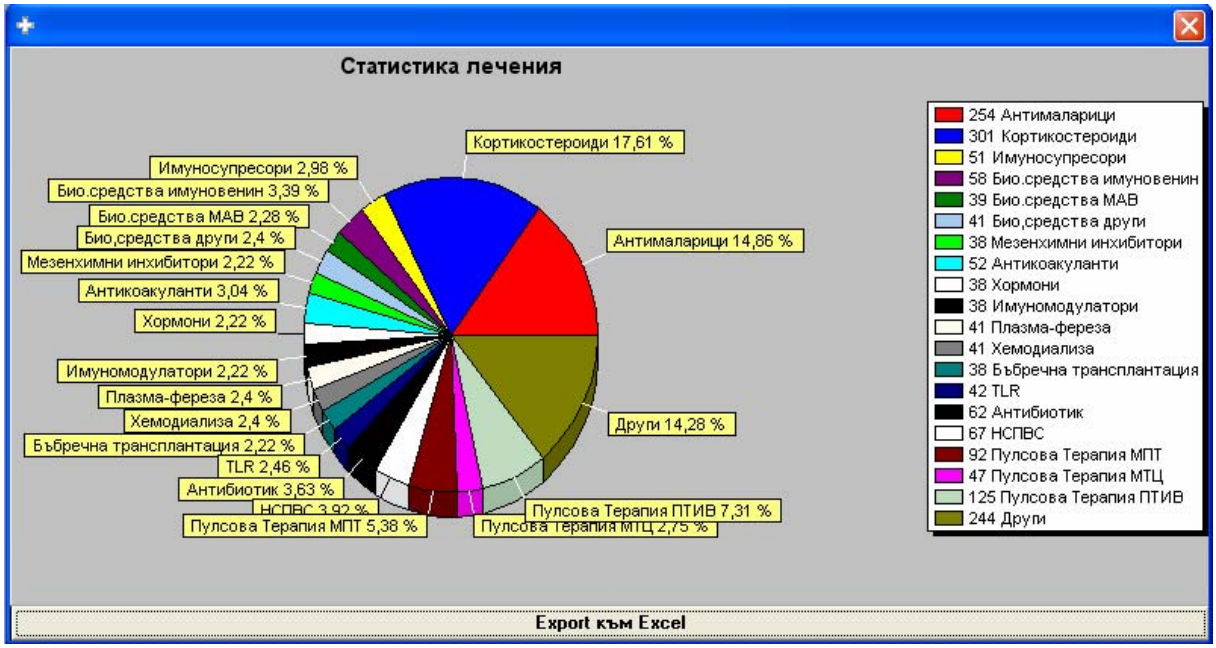
For one year period we have entered 100 patients with approximately 10 visits each, we have developed an English version of the software and educational on-line platform for assistance from distance to the medical stuff, that works with the software.

Some statistics preview

1. ARA criteria
2. Activity criteria
3. Men/Women
4. Treatment scheme and medications
5. Age at the beginning of the disease







Microsoft Excel - Sheet1

File Edit View Insert Format Tools Data Window Help

F34

	A	B	C	D	E	F	G
1	**Перудообразен еритем**	**Дискоидни лезии**	**Фотосенсабилизация**	**Афтоза**	**Артрит**	**Серозит**	**Нефрит**
2	128	43	136	40	232	99	247
3							
4							
5							
6							
7	**Имунологични отклонения**						
8							
9							
10	**C3**	**C4**	**ANCA**	**ANA**	**iga**	**igg**	**igm**
11	93	164	73	276	38	38	37
12							

Conclusion

For the Bulgarian medical institutions this is the first specific immunological database with retrospective entered data.

Our purpose is to ensure statistical background on the one hand for researching and on the other – complete information for the population.

The advances in medical care, genetic tests and development of software database for precise statistics and research would make possible to cure and even to prevent from these fatal disease.

The successful treatment schemes of Lupus depends on:

- increased information for new technological, software and research methods;
- increased communication between medical experts from different countries;
- increased information for patients at every language.

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