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# **Introductory Chapter: Gastric Cancer in the Past and Our Days**

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Additional information is available at the end of the chapter

<http://dx.doi.org/10.5772/intechopen.70203>

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## **1. Introduction**

The medicine went over extremely increased developmental process in the last century. The early decades of twentieth century can be characterized by the descriptive medicine, when the different clinical entities were separated from each other on the basis of symptomatology of different diseases, and the role of classical physical examinations was emphasized. These years, we practically can't speak on the curative medical therapy (the surgery was an exception in this term).

From the mid of last century, different methods such as X-ray examinations, ultrasonography, and other iconographic methods (including a computer tomography, MRI examination methods, and radioisotope examinations) and different laboratory examinations (including the general approaching parameters, later the specific parameters to infection diseases, immunological disorders, and radioimmunoassays) entered into the different medical activities of the physicians. These above-mentioned changes in the medical practice resulted in an extremely strong development in making a correct diagnosis of the patients.

In the 1970s appeared the “problem-orientated medicine” both in the teaching and in the clinical practice. The aims of this period can be characterized by the logical planning and carrying out of examinations of patients with different disorders aimed at the correct diagnosis for patients. The medical therapy was not well emphasized as the diagnostics (of course, we have relatively little knowledge on the therapeutic possibilities).

The pharmacological research started very actively from the second part of the last century. Some of the physicians recognized the facts that the results obtained in animal observations can't be applied directly in the human therapy (without some human observations). The human clinical pharmacology (as a very important branch of practical medical research) appeared from 1960s. The established clinical pharmacology introduced the

“evidence-based medicine” from 1980s. This period covered the correct diagnosis and scientifically based (proved) therapy in terms of medicine. In the early years of this period, the drug actions were observed (later tested) on healthy human beings and in patients with different diagnosis. Following the first years appeared the randomized, prospective, multicentric, and multiclinical studies, and thereafter these studies were carried out in huge number of patients suffering from the same disorders.

The international organization of human drug research has been absolutely required the involvement of different nations from the different continents in the same studies (multinational) studies. One of the many factors the selections of patients including the same study other problems (age, body weight, correct diagnosis, the same stadiums of the disease, correct laboratory parameters, genders, nutritional habits, used drugs, etc.). The selections of the patients into the different drug therapies had been carried out randomly. Physicians (who actively participated in carrying out these observations) were not informed on therapeutically applied drugs (similarly to the patients), because these studies were done in accordance to previously permitted protocol(s).

These observations were done absolutely in accordance to earlier and the strictly prepared protocols (time of drug administration, collection of biological samples (blood and urine), relevant examinations, food and fluid consumption, etc.), and the protocols were previously permitted by the national authorities (respecting the ethical and medical aspects, cost and benefit, dangers of treated patients, etc.).

The critical evaluation of efficiencies of different drugs (or drug combinations) included the very complicated computer participation in the pharmacological research. Meanwhile, the detailed therapeutic effects resulted in the “meta-analysis” of drug (or drug-combination) actions.

The results of these examinations led us to plan a “generally accepted therapeutically used form” of drug therapy in the everyday medical treatment (guidelines).

Medically, we have to understand that these studies depended on the results obtained in huge number of human observations; however, an actually present patient was only one from the patients participated in whole ones of the big studies. Surprisingly, the results obtained in one patient differed from those obtained in big randomized studies. Of course, the physicians recalled the insufficient complaints of patients or some other causes. Later on, many other possibilities existed to explain the insufficient medical therapies, and their became to be clear by the new results of molecular biology, genetics, immunology, immunohistochemistry, and of new development of medical science (molecular pharmacology, biochemical pharmacology pharmacogenetics, etc.).

In this century, the development of medical sciences has been in an extremely high speed in different fields (including the basic research and clinical research), which produced an abnormally increased quantity and quality of our knowledge.

We have to realize that oncology is one of these fields indicating rapid changes from day to day. Consequently, the diagnostic and therapeutic possibilities in our hand are changing day to day. This is an absolutely new challenge to physicians and this offers new possibilities for the patients.

Gastric cancer remains an important issue in the world of oncology. In 2013, it was ranked fifth by the global incidence and second by mortality. It's true that the death rates have decreased significantly in the USA and Europe over the near one hundred year period; meanwhile, gastric cancer is characterized by poor prognosis and high mortality, except in early diagnosed cases. The well-known histology of gastric cancer clearly indicates the correct diagnosis of disease, and the National Comprehensive Cancer Network (NCCN) indicates therapeutic guidelines to treat the patients with gastric cancer (recently Gastric Cancer, Version I.2017 – March 21, 2017. [www.NCCN.org](http://www.NCCN.org)).

The oncological research in gastric cancer covers the classical clinical examinations, genetics, iconography, molecular biology, biochemical pharmacology, modern immunohistochemistry, clinical pharmacology, immunology, medicine, gastroenterology, surgery, oncology, nutrition, chemical toxicology, modern bacteriology, and virology.

The book gives an excellent cross section of the different oncological studies done in the last years and offers absolutely new knowledge both for basic and clinical researchers (role of Epstein-Barr virus in tumor genesis, gastric carcinoma stem cells, molecular heterogeneity, prognostic factors, treatment strategies, the actualities in the targeting therapy, responsibility of pathologists in the diagnosis and therapeutic decisions) and these together indicate clearly the change in our therapeutic strategies in the field of malignant disease.

The present book contains 11 excellent book chapters, which indicate the most recently obtained results in the fields of researches on gastric cancer. The participants of this book are basic and clinical researchers from Chile, Spain, France, Slovenia, Romania, Japan, Slovakia, Latvia, Germany, and Brazil.

The results of these above-mentioned observations are going on the border existing between the results of classical multiclinical, randomized, prospective, and multinational studies (including the presently applied and internationally accepted protocols) vs. the scientifically based (however individual) molecular targeting organ therapies (respectively the updated new results of molecular biological, immunological, immunohistochemical observations, etc.). These scientific and medical challenges a priori suggest the fruitful cooperation between the different research and medical treatment centers all over the world and offer new era of therapies of malignant disorders (including gastric cancer).

## Acknowledgements

The editors thank very much the excellent cooperations of the contributors in this book at the time of book edition.

The editors are especially thankful for the excellent support given by Ms. Ana Pantar (Senior Commissioning Editor) and by Ms. Mirena Čalmić (Publishing Process Manager) and Mr. Teo Kos (Publishing Process Manager) from Intech Open Access Publisher; without their help, the publication of this book would not be possible.

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