Abstract

Hematology is a comprehensive discipline covering all oncological and non-oncological aspects of diseases of the blood or related organs. Hematological researchers have been pivotal in the progress which has been made in molecular diagnostics, targeted therapies, and hence personalized medicine. Besides the rapid scientific and clinical developments political and strategic issues have to be addressed: Education of medical personnel needs harmonization throughout Europe; patients all over Europe should have equal access to treatment, and further scientific progress has to be secured through funding on a national, European and international level despite economic restraints. The European Hematology Association (EHA) pursues these issues with and for all European hematologists and patients.

Introduction

Hematologists are trained to cover all aspects of diseases of the blood and related organs, including oncological and non-oncological illnesses. (1) Decisive discoveries which were later translated into general oncology have been made in diagnostics and therapy of hematologic malignancies due to the accessibility of leukemic cells.

In the general public, non-oncological diseases are sometimes not recognized enough, despite the fact that at any given moment, more individuals have iron-deficiency anemia than any other health problems. Even in high income countries, iron deficiency is common. (2) The impact of symptomatic venous thromboembolism (VTE) events was estimated in a study of six EU countries (FR, GE, ES, IT, SE, UK, with a combined population of 301.4 million) to reach numbers greater than 761,000 yearly and the number of VTE-related deaths exceeds 370,000. (3) Diagnostics in inherited diseases such as thalassemia are well advanced.

Medical and scientific breakthroughs in hematology

Scientific developments have improved and diversified the classification of leukemias and lymphomas and paved the way to personalized medicine. We have learned which genetic factors inherent in the host or the tumor influence the development and outcome of hematologic diseases. In addition, different social, psychological and environmental (macroenvironmental) as well as tissue (microenvironmental) factors influence the course of disease or the response to treatment in a given patient. (4)

In 2007 the first sequence analysis of a whole tumor (acute myeloid leukemia) was published. (5) In the meantime most of the frequent hematological cancer types have been genetically deciphered. With the advent of technologies which make genomic sequencing affordable for every patient - and potentially every individual - medicine will have to adapt. (6)

Novel targeted drugs such as the monoclonal antibody rituximab in lymphoma or the small molecule inhibitor imatinib in chronic myeloid leukemia have changed our treatment paradigms.

There are differences in genetics and disease prevalence among ethnic groups and geographical areas which impact on the prevalence of diseases in various regions of the world. For instance, thalassemia is frequent in the Mediterranean area and the Middle East, but rare in Northern European regions.

All these factors have an impact on health care.

Social and political developments

In the future there will be more targeted or tailored treatments which improve the prognosis of patients. These therapies will be given for longer periods and will cause higher costs. On the other hand, patients will be able to lead more normal lives and can be treated on an outpatient basis. With increasing diagnostic and therapeutic options we will need IT tools to integrate the huge amount of information on a specific patient in order to help doctors to make the right decisions.

Research, clinical management, health care facilities, insurance
policies as well as education of health care professionals need to adapt to the novel developments in hematology.

Health care costs will potentially increase and political decisions will be needed in order to ensure access and affordability to all treatments for patients all over Europe and around the world. For professional hematologists, EHA aims to improve and harmonize medical education, to support research and to lobby for hematology on a European level. (7) However, international cooperation of all major stakeholders (patient organisations, health professionals, national haematological societies, European authorities, governments, health and research authorities, pharmaceutical industry) is the adequate response to these new developments.

References