

Editorial

The Power of Informatics

Z. KOSTROUCH

Laboratory of Molecular Pathology of the Institute of Inherited Metabolic Disorders, Charles University in Prague, 1st Faculty of Medicine, Prague, Czech Republic

The wide access to the information pool gathered by human society is probably the most characteristic feature that distinguishes our present time from the not so distant past. The unprecedented access to information from all thinkable fields communicated by the Internet and the shift in formal education towards natural sciences and engineering makes topics that used to be exclusive for small groups of specialists accessible to the wide public. On the other hand, because of the extent and depth that one is able to find about a single topic, a feeling that all topics are beyond the actual person's comprehensive knowledge is part of most peoples' opinions.

The present issue of *Folia Biologica* brings the paper of Flachsova et al., 2007, describing a study initiated by an educated patient who, led by an initial biochemical test and inspired by Internet searches, diagnosed himself as having acute intermittent porphyria and asked his physician for a particular therapy. The patient then sent his blood for molecular analysis and initiated an international study. The study uncovered a new familiarly transmitted mutation in one enzyme of the haem metabolic cascade, the porphobilinogen deaminase. This initiative in the hands of specialists using not only targeted experimental work, but also the same tool as the patient, the Informatics, enabled the authors to use the naturally occurring familial mutation together with other known mutations and computational biology to predict a new domain, present in vertebrates, that is likely to have regulatory and protein-stabilizing functions.

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Corresponding author: Zdenek Kostrouch, Laboratory of Molecular Pathology of the Institute of Inherited Metabolic Disorders, 1st Faculty of Medicine, Ke Karlovu 2, 128 01 Prague 2, Czech Republic. Phone: (+420) 224 967 090; Fax: (+420) 224 967 119; e-mail: zdenek.kostrouch@lf1.cuni.cz

In the famous starting scene of the novel "Three Men in a Boat (To Say Nothing of the Dog)" by Jerome K. Jerome, the main character realizes he suffers from all symptoms listed in a leaflet to a patent-liver pill. To find out more about his symptoms he visits the British Museum and searches in a medical book. Listing through it he finds out his situation is even worse than he had previously thought – he suffers from all the diseases he has read about. With this new knowledge he decides he must visit his doctor. This story points to the fact that fruitful and correct initiatives based on the increasing public medical and biological consciousness will be far overwhelmed by incorrect bombardment of doctors and specialists. On the other hand, the enormous access to the data about so many diseases, symptoms, medical and laboratory tests lead today's patients in the right direction.

Another immediate message of the study of Flachsova et al. is that the collective use of knowledge primarily depends on the quality of accessible data. Unfortunately, many formerly freely accessible sites are now accessible for a fee. Nevertheless, the collective effort of interested users and generously sponsored official sites seem to work more efficiently than any foreseeable for profit activities. It is the openness of professional sites' that is contributing a great deal to the effectiveness of the information boom. Websites which pioneered the unrestricted sharing of scientific data, like PubMed and other databases of National Center for Biotechnology Information (<http://www.ncbi.nlm.nih.gov/>), databases of EMBL-EBI (European Molecular Biology Laboratory – European Bioinformatics Institute) (<http://www.ebi.ac.uk/Databases/>), Center for Information Biology and DNA Data Bank of Japan (CIB-DDBJ) (<http://www.cib.nig.ac.jp>) and many more websites that are often taken for granted, should be valued for their role in the contemporary development of global consciousness.