

Add life to your days, not just days to your life

by Marco Confalonieri

The global economic crisis of recent years urged the spending review attitude in all sectors of society, including health care. The misapplication of spending review could lead to reduced funding for the efficient and excellent medical centers in the same way the cuts to inefficiencies. Moreover, the misapplication of spending review is particularly crucial for the public health system which is more influenced by the current patients' assistance needs than to invest into the future of medicine. Two costly aspects of health systems are independent from the direct care of the current patients and electors: research and education. Nevertheless, research and education are not unnecessary costs, but ensure the future of either medicine and patient care. Medical knowledge advances today in the wake of the knowledge of the basic sciences. Since ancient times medicine was an invention of human rationality to try to add more life to days, not just more days to life (1). In fact, the Ancient Greek character Asclepius founded medicine as a human activity aimed to overcome the nature's limits up to the victory of the battle against death. Since ancient times the ambition of physicians was to obtain not just a longer, but also a better life to individuals. Not surprisingly, the symbol of Asclepius is inserted into the logo of the World Health Organization. The modern medical research seems to revitalize the ancient principle of Asclepius thanks to the regenerative medicine more than the chronic diseases care, merely addressed to prolong disability and days to life. We are now aware that chronic degenerative diseases are not the simple results of repeated micro-injuries, but it is the cell senescence which impairs repair process and exacerbates inflammation after tissue injury (2). Cell senescence may be replicative and premature one. Long-term pulmonary injuries, e.g. cigarette smoking, significantly increase the risk of various lung diseases, including chronic obstructive pulmonary disease and lung cancer, and contributes to premature death (2). Many *in vitro* and *in vivo* studies have elucidated mechanisms involved in cigarette smoke-induced inflammation, DNA damage, and autophagy, and the subsequent cell fates, including cell death, cellular senescence, and transformation. As a consequence, pulmonary emphysema is almost absent within the first three decades of life even in individual with genetic deficiency of alpha1-anti-trypsin. So, aging is fundamental for the development of lung emphysema. Genetic defects and environmental injuries may accelerate aging causing premature cell senescence that alters regenerative/repairative processes (3). Understanding cell senescence



mechanism and interfering with them is just now and in the next future a fascinating challenge for medical researchers worldwide. To obtain resources for future medicine should be saved money from administrative bureaucracy of healthcare systems which are diffused in public health systems. Therefore, we need that medicine becomes more and more science and less art, to avoid losing the direction of the future. To do this, physicians and scientists must work together daily bringing scientific research to the patient's bedside. The time of spending review in medicine and health care will go on for years and ever, so it is time now to think as an opportunity the optimization of spending in health systems, but also to have more molecular labs and cell factories within hospital centre of excellence worldwide.

References

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