

COMMENTARY

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IMMUNOTHERAPY"

**Dear Drs. Nelson Hamersclak
and Fernando Barroso,**

Congratulations for your article in the JBMTCT on AI and EI! Wonderful as you relate it to Albert Einstein, Aldous Huxley, Antoine de Saint Exupery, Charlie Chaplin and Fernando Pessoa! There are two properties a good physician should have: excellent knowledge of science and great empathy for the patient. Medicine without careful science is charlatanism, we know that many colleagues are making lots of money with some sort of charlatanism. That does not mean we scientific doctors know everything, but we rely on reproducible studies. In some cases we extrapolate from previous science got new situations. However, extrapolations are easier with deep and extensive knowledge. The extent of knowledge is so large that we may need AI to use it. During 50 years my interest has been stem cells, physiology of persistence, recruitment and differentiation on one side and immunology on the other side. There are still secrets on their resilience against radiation and chemotherapy, their recruitment in steady state and the expansion of reproduction. We are still learning on clonal predominance and progression from CHIP two MDS and AML. In immunology we have learned that there are not only „go“ signals, but also „hold“ signals, and a major question is the immune memory. Regulatory T cells are extremely important as are regulatory B cells; suppressory macrophages are important in addition to stimulatory M1. We transplant hematopoietic stem cells from marrow and blood containing

extensive proportions of immunocompetent cells. We know little about the immune memory of the donor, often also of the patient; HLA-compatibility and CMV serology excepted we know little about minor HAs, microbial colonization and translation of microbial peptides., latent viruses, immunizations by sexual contacts. Meanwhile we know that HLA-differences are not equal, but peptide binding motives are more important. Immune suppression alone is not constructive, we are looking for tolerance inducing procedures. AI may help to define the roles of thousands of factors of patient and donor by evaluating gene sequencing and microbial analysis. Already AI has an enormous impact on diagnostics of the disease at an early stage. Empathy for the patient is a difficult area to teach. Kant's philosophy may help, freely translated „treat the patient as you would like to be treated as patient“. That means „tell him or her the truth, but not without giving him/her a helping hand. Accept that you can learn from your patient as he/she sees the problems. Through your knowledge you always find a way for dealing with the problems. Think of „Le petit prince“ and take your responsibility. There are many rules and juries that may help in your orientation, but you are the doctor of your patient hoping for the best treatment.

With best regards from a sênior,
Hans-Jochem Kolb