

Extracellular matrix and ground regulation: The importance of pH from an alternative medicinal point of view

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Background and aim. “The concept of a cell is, strictly speaking, only a morphological abstraction. Seen from a biological point of view, a cell cannot be considered by itself without taking its environment into account.”

With these words Alfred Pischinger (MD) was the first scientist to describe the importance of the extracellular matrix (ECM) and to state that almost every disease starts within the ECM. To his opinion not only the regulations within cells (histological segmentation) play major role in regulation of body function, but the surrounding milieu.

Besides the transport elements blood and lymphatic system, matrix building cells as the fibroblasts and collagens are found in the so-called Pischinger room. Additionally, nerve fibres, elements of the immune system and cells of surrounding organs are embedded. In this connective tissue transferring (nutrients, waste) and communication between cells and organs (interleukines etc.) takes place. The main components of the Pischinger room are proteoglycans and glycoproteins. They act due to their negatively charged groups as ion exchangers and stationary buffers for free protons. If these structures are disturbed, constipated or blocked no regulation may be possible at all.

This tissue acidosis triggers because of its pro-inflammatory properties a permanent stimulus onto the neurovascular-connected cells and the ECM itself (stimuli-carcinogenesis). Primary control parameter for the homeostasis between ECM and cell is the pH. Usual cells have their maximum functionality at neutral pH-values. Permanent tissue acidosis changes the pH and the homeostasis of the microenvironment. The ECM undergoes unspecific senescence with increased collagen and hyaluronic acid production. This chronic dysregulation of the matrix plays a significant role during the development of cancer.

In an organism with a healthy metabolism the daily accumulation of metabolic end products is removed from the connective tissue and excreted on a daily basis. Because of this, the fundamental treatment in naturopathy is the deacidification/detoxification. Every further therapy, herbal or homeopathic, is based on „cleaning“ the matrix with the help of body`s own natural, main buffer substance bicarbonate.

Bicarbonate is produced during the absorption of nutrients from the parietal cells and is released in the duodenum to neutralise stomach juices. In addition, bicarbonate is necessary as a buffering substance in the blood and is constantly used here. As a result, carbon dioxide is produced, which is eliminated by respiration via the lungs. In order to keep the bicarbonate pool of the organism at a constant level, it has to be continually replenished.

Conclusions / Discussion. We would like to point out the relationship between diet-induced acidosis, a therefore disturbed acid-base-balance and tissue homeostasis, altered ECM and the development of diseases.


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References

Niv, Y., Fraser, G.M. (2002): „The alkaline tide phenomenon.“ *J Clin Gastroenterol*

Keywords: Pischinger, Ground Regulation, tissue acidosis, bicarbonate, Extracellular Matrix

Conference: 4th Annual Meeting of the International Society of Proton Dynamics in Cancer, Garching, Germany, 10 Oct – 12 Oct, 2013.

Presentation Type: Abstract **Topic:** 9. Acidity as a target for antitumor therapy

Citation: Ulm C and Weiß G (2014). Extracellular matrix and ground regulation: The importance of pH from an alternative medicinal point of view. *Front. Pharmacol. Conference Abstract: 4th Annual Meeting of the International Society of Proton Dynamics in Cancer*. doi: 10.3389/conf.fphar.2014.61.00047

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