6.0 DISCUSSION

6.1 INNOVATIVE ASPECTS OF OED

There is a lot of controversy surrounding the existence of OPA / AP on the skin in general and their bioelectrical features in particular. Nevertheless, these specific areas have been used in physical medicine, especially for reflexive therapy purposes e.g. acupuncture, acupressure, analgesic electrostimulation (TENS), laser therapy, magnet therapy, reflexive thermotherapy (‘moxa’, cryotherapy), and so-called reflexology (reflexive massage of feet). This already suggests a specific role for OPA / AP in human physiology. However, there has been no direct evidence of a real functional connection between the skin surface and related internal organs.

According to our research, the so-called ‘pointscopes’ (presumed detectors of AP) detect spots of diminished electrical resistance almost everywhere on the skin surface, as a result of very short distances between LRP (35-37). Electrical potential measurements of the skin surface are not suitable for organ diagnostic purposes because the specific bioelectrical properties of OPA / AP can only be demonstrated under the influence of an adequate external electrical source (35-37). In terms of bioelectrical features, OPA / AP do not distinguish themselves from other areas of skin, except for the specific dependence of their impedance characteristics on the actual condition of respective internal organs.

The key to obtaining these values of the electrical resistance of OPA / AP, which demonstrate a correlation with the condition of a related organ, is the ‘breakthrough effect’. This phenomenon has been investigated by other authors (9,20,21,43), but never in the context of medical diagnostics. The ‘breakthrough effect’ probably reflects the electrical current’s penetration through
the lipid layers of the stratum corneum (27). Only after it is obtained, the skin resistance measured
by means of a positively polarized electrode is significantly higher for the diseased organs’
projection areas, when compared to the resistance for the same but negatively polarized measuring
electrode. For healthy organs’ projection areas this phenomenon is not observed to a significant
extent. The ratio of the ‘positive’ and ‘negative’ measurements is not affected by all the factors
which influence the actual skin resistance values, therefore a universal point of reference is
established (32).

The impedance of skin areas corresponding to diseased organs is higher than that of healthy organ
related skin zones. Nevertheless, the use of impedance measurements for organ diagnostic
purposes requires separate calibration for different kinds of skin, to determine a point of reference
(32). This must be compared with the impedance value obtained with a measurement electrode in
order to obtain a diagnostic result. Theoretically the best diagnostic results are obtained using low
frequencies and high voltage amplitude. In practice, individual pain thresholds complicate the use
of this technique.

The OED results directly confirmed a functional connection between internal organs and related
OPA / AP on the skin surface and created the basis for an evidence-based map of auricular OPA.
However, our investigations did not prove the existence of so-called bioenergetic meridians of the
human body (34).

6.2 PROSPECTIVE APPLICATIONS FOR OED IN CONTEMPORARY
MEDICINE

This study confirmed that OED is a reliable bioelectronic method of non-invasive medical
diagnostics, with high rates of sensitivity, specificity and predictive values. The fact that the
negative predictive value (93%) is higher than the positive predictive value (81.7%) suggests that OED may be relatively oversensitive. However no clinical follow-up was done – OED could have detected pathology earlier than the comparative clinical methods. OED produces unequivocal diagnostic results immediately, with no need for any additional calculations. The use of optimal measuring parameters ensured accurate diagnostic results while avoiding any unpleasant sensations. Special attention should be paid to the ability of OED to investigate organs that are not easily accessible by means of standard diagnostic methods. Furthermore, it makes a rapid assessment of all internal organs possible. The OED procedure is painless, easy to perform, quick and very cost effective, making the technology well suited for regular screening examinations. This method not only detects diseased organs, but it also estimates the extent of the pathological process. The possibility of utilizing OED in monitoring of the course of chronic diseases as well as for the early estimation of the efficacy of treatment has therefore become evident. OED will not replace existing diagnostic methods, but provides additional information.

A risk associated with this method is the possibility of misdiagnosis due to incorrect placement of the measuring electrode, similar to the risk of misplaced ECG or EEG electrodes. Therefore various means have been implemented in the Diagnotronics device to minimise this risk. A high resolution graphics display clearly indicates where the electrodes should be placed during each measurement. The software requires that each result be verified with a second measurement before the final diagnosis is specified.

AP selected according to classical acupuncture rules for therapeutic stimulation, display the above described changes in their electrical characteristics (34-37). AP which do not correspond to diseased organs according to these rules, do not usually display these changes. This suggests the usefulness of OED in the practical selection of optimal skin zones for reflexive therapies. In this
way OED may increase the efficacy of these therapies and create the foundation for scientific acupuncture.

6.3 HYPOTHETICAL NEUROPHYSIOLOGICAL FOUNDATIONS OF OED

The aims of this study do not include an explanation of the neurophysiological mechanisms which underlie the OED phenomenon. However, it appears that OED has initiated a new generation of medical diagnostics, which in a noninvasive way gets access to the body’s own information network – the nervous system, in an attempt to obtain precise data about the actual state of internal organs (27). The nervous system is the primary computing system of the human body. The sensory nervous system detects any damage done to the body from both outside and inside and sends the information, at the earliest stage of pathology, to the central nervous system (CNS), which controls potent self-defense mechanisms. These nociceptive signals originating from a diseased organ probably stimulate sensory nerve fibres coming from the skin, at convergence points most likely situated in the spinal cord or higher levels of the CNS e.g. thalamus or cortex. In this way (antidromic direction) signals from the diseased organ could reach OPA on the skin surface, there inducing detectable electrical changes (CONVERGENCE MODULATION THEORY) (27). By gaining access to this first hand source of information, OED introduces new possibilities for early detection and even management of disease.