

Letter to the Editor

## Comments on “The beneficial role of electrochemotherapy in locally advanced pancreatic cancer – radiological perspective”

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### Dear Editor,

We read with interest the article from Dr. Kozak and colleagues in “Polish Journal of Radiology” [1], in which they assessed irreversible electroporation (IRE) as an interesting tool in the treatment of locally advanced pancreatic cancer (LAPC). We congratulate the authors on their accuracy in data presentation about IRE in LAPC reporting recently published manuscripts [2-4]. However, we would like to clarify several data and report some recent results on electrochemotherapy in LAPC. Reversible and irreversible electroporation are 2 different modalities to apply an electric field with the aim of permeabilising the cell membrane and obtaining a different effect: in the first case, the transient permeabilization of cell membrane facilitates drug delivery; in the second case, the cell membrane permeabilized irreversibly will subsequently undergo cell death. Therefore, the correct use of the term “electrochemotherapy” (ECT) is associated with a combination therapy based on electric pulses and drugs, i.e. a combined low-dose of chemotherapeutic drugs with an electrical field that determines a transient increase of cell permeability (reversible electroporation), allowing uptake of chemotherapeutic drugs into the tumour, using low doses and reducing the cytotoxic effects [4,5]. Therefore, in contrast to what was reported Dr Kozak and colleagues [1], IRE cannot be defined with the term of ECT, and, although both IRE and ECT can be safely used to treat LAPC patients, these techniques are profoundly

different [6-10]. Some authors have evaluated the feasibility and effectiveness of electrochemotherapy on deep tumours [6-18]. In our previous study we showed that electrochemotherapy on pancreatic tumours can be performed safely and feasibly [6]. No side effects or major complications, no clinically relevant elevation of amylase and lipase levels, and no evidence of clinical pancreatitis were observed in the LAPC patients treated with ECT. Although it has been shown that ECT is a promising technique for cancer treatment, there is still the problem of how to assess treated tumour response. ECT potentiates the cytotoxic effect of chemotherapy, and therefore the Choi criteria would appear to be more suitable for early treatment evaluation [8]. We demonstrated that local disease control (partial response) obtained according to Choi criteria was obtained in 18/18 (100.0%) patients treated with ECT [8].

In conclusion, we believe that the readers of “Polish Journal of Radiology” should know that the term IRE should not be confused with the term electrochemotherapy, which is reserved for a combination of low doses of chemotherapeutic drugs with an electrical field that determines a transient increase of cell permeability (reversible electroporation) [13-18].

### Conflict of interests

The authors declare no conflict of interest.

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### Authors' contribution:

A Study design · B Data collection · C Statistical analysis · D Data interpretation · E Manuscript preparation · F Literature search · G Funds collection

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