

## Opinion

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# Ultrasound Ablation in Advanced Pancreatic Cancer Patients – What should be the Next Step?

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To the Editor,

In the last decades the treatment for many diseases has changed dramatically. Open surgery procedures with high morbidity and complication rates, suboptimal clinical results based on large impairment for the patients were replaced by drug treatment or minimally invasive techniques. Examples such as interventional cardiology procedures in acute myocardial infarction, interventional endoscopies in the treatment of hepato-biliary tract diseases, eradication of *Helicobacter pylori* for gastric ulcer using drugs are good evidence that the words of William Osler “Diseases that harm require therapies that harm less” are valid now-a-days.<sup>1</sup>

Pancreatic Cancer (PC) is one of the most aggressive malignant diseases which survival rate, clinical results and treatment has not improved substantially in the past 40 years. Radical surgery is still the only curative method for pancreatic cancer in early stage. Estimated, only 20% of all cases with PC in early stage are suitable for surgical resection at the time of diagnosis, still the expected 5-year survival rate remains 5-20%. The other 80% of cases with advanced PC (including locally and systemically advanced pancreatic cancer) have an expected median survival time of only a few months and almost 0% of 5 year-survival rate when effective alternative treatment methods are missing.<sup>2,3</sup> In those patients with unresectable advanced pancreatic cancer, there is still an urgent need for effective therapies that should not only achieve sufficient local tumor control but also improve local symptoms and quality of life as well as alleviate tumor-associated pain.

During the last decade, High Intensity Focused Ultrasound (HIFU) has been introduced as an innovative non-invasive method for thermal ablation of benign and malignant solid tumors. For the last 15 years clinically approved medical devices using MRI- or US (ultrasound) – guidance have been introduced.<sup>4</sup> From 2003 to 2014, series of studies have been published regarding Asian patients with advanced PC who were treated by US-guided HIFU (USgHIFU) with good clinical results.<sup>4-6</sup> Despite the great number of Asian studies, there are only a few cases with Caucasian patients.<sup>7,8</sup> All of these studies showed that USgHIFU ablation is a feasible, safe and effective treatment for pancreatic cancer with a crucial clinical benefit for the patients in terms of reduction of tumor volume and pain intensity.

All studies described in the literature include selected patients. Similar inclusion and exclusion criteria are followed. All of the articles showed a single institution experience based on case series. According to the levels of evidence developed by the Oxford Centre for Evidence-based Medicine for treatment, this represents level 4 and the grade of recommendation for the physicians should be grade C (optional).<sup>9</sup>

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In our centers, we have used USgHIFU device for non-invasive ablation of advanced PC. In our daily practice, we have seen that the patients treated with USgHIFU and simultaneous chemotherapy experienced significant and lasting reduction of pain intensity and tumor volume regression over time. Hence, patients' quality of life was improved which emphasizes the clinical benefit of USgHIFU. But we still don't have results from prospective or retrospective multi-center studies. Case-control or cohort large-scale studies are also missing. Hereby, we would like to emphasize on the acute necessity for large-scale prospective randomized and multi-center clinical trials to evaluate the safety, clinical and long-term efficacy of USgHIFU treatment especially regarding overall survival with or without simultaneous chemotherapy in the patients with advanced PC. After this step up on the evidence based medicine stairs, more physicians and patients should be involved and the position of HIFU in future algorithms for the management of locally advanced pancreatic cancer can be defined.

#### CONFLICTS OF INTERESTS

The authors declare that they have no conflicts of interest.

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