

**Name of Journal:** *World Journal of Gastroenterology*

**Manuscript NO:** 55327

**Manuscript Type:** MINIREVIEWS

**Recent progress in pulsed electric field ablation for liver cancer**

Zhen-Guo Liu, Xin-Hua Chen, Zu-Jiang Yu, Jun Lv, Zhi-Gang Ren

### Abstract

The number of liver cancer patients is likely to continue to increase in the coming decades due to the large global liver cancer population and changing risk factors. Traditional treatments cannot meet the needs of all patients. New treatment methods evolved from pulsed electric field ablation are expected to lead to breakthroughs in the treatment of liver cancer. This paper reviewed the safety and efficacy of irreversible electroporation in clinical studies, the

### Match Overview

|   |                                                                                                                                                             |     |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 1 | <b>Crossref</b> 28 words<br>Jean-Charles Nault, Olivier Sutter, Pierre Nahon, Nathalie Ganne-Carrié, Olivier Séror. "Percutaneous treatment of he ..."      | 1%  |
| 2 | <b>Internet</b> 23 words<br>crawled on 26-Sep-2009<br><a href="http://www.fasebj.org">www.fasebj.org</a>                                                    | 1%  |
| 3 | <b>Crossref</b> 20 words<br>Alexander Golberg, Martin Villiger, G. Felix Broelsch, Kyle P. Quinn et al. "Skin regeneration with all accessory organs ..."   | 1%  |
| 4 | <b>Crossref</b> 20 words<br>Patricia C. Valery, Mathieu Laversanne, Paul J. Clark, Jessica L. Petrick, Katherine A. McGlynn, Freddie Bray. "Proje ..."      | 1%  |
| 5 | <b>Crossref</b> 15 words<br>Martin P. Stewart, Robert Langer, Klavs F. Jensen. "Intrac ...<br>ular Delivery by Membrane Disruption: Mechanisms, Strate ..." | <1% |
| 6 | <b>Internet</b> 14 words<br>crawled on 26-Apr-2020<br><a href="http://worldwidescience.org">worldwidescience.org</a>                                        | <1% |
| 7 | <b>Internet</b> 14 words<br>crawled on 30-Nov-2018<br><a href="http://www.spandidos-publications.com">www.spandidos-publications.com</a>                    | <1% |
| 8 | <b>Crossref</b> 12 words<br>B. F. ... A. N. ... E. D. ... M. ... A. ... J. ...                                                                              | <1% |





国内版

国际版

Recent Progress in Pulsed Electric Field Ablation for Liv



ALL

IMAGES

VIDEOS

20,000 Results

Any time ▼

## Pulsed Field Ablation for PVI in AF - American College of ...

<https://www.acc.org/.../articles/2019/12/17/08/40/pulsed-field-ablation-for-pvi-in-af>

Dec 17, 2019 · **Pulsed field ablation (PFA)** is a nonthermal energy modality that has been utilized for both gene electrotransfer and solid **organ tumor ablation** for many years. 7,8 More **recently**, investigators have demonstrated a unique safety profile and ablative efficacy related to its ability to selectively target cardiomyocytes while sparing collateral tissue. This has propelled PFA into the spotlight as a novel energy source for **cardiac ablation**.

## Application of Pulsed Electric Fields to Cancer Therapy ...

<https://www.liebertpub.com/doi/full/10.1089/bioe.2018.0001>

**Pulsed electric fields** have been used in **cancer therapy** for the past three decades. For the **treatment of surface skin lesions**, millisecond- and **microsecond-domain pulses** have been used to treat thousands of patients in many European countries.

**Cited by:** 1

**Author:** NuccitelliRichard

**Publish Year:** 2019

## The Promise of Pulsed Field Ablation | EP Lab Digest

<https://www.eplabdigest.com/promise-pulsed-field-ablation>

**Pulsed field ablation** is a very promising new technology for the **treatment** of **cardiac arrhythmias**. The mechanism of **ablation** is nonthermal, and its effects show a high degree of tissue selectivity. It is anticipated that durable **pulmonary vein isolation** will be rapidly achievable with very low risk of collateral injury.

## [PDF] Pulsed Electric Fields in Cancer Treatment

<https://pdfs.semanticscholar.org/3f06/4df0ac6d3fc524924a0e56448fa624b4963b.pdf>

The application of **pulsed electric fields** has emerged as a local, non-thermal and drug-free



国内版

国际版

Recent progress in pulsed electric field ablation for liver c



ALL

IMAGES

VIDEOS

15,700 Results

Any time ▼

## [Pulsed Field Ablation for PVI in AF - American College of ...](#)

<https://www.acc.org/latest-in-cardiology/articles/...> ▼

Dec 17, 2019 - **Pulsed field ablation (PFA)** is a nonthermal energy modality that has been utilized for both gene electrotransfer and solid **organ tumor ablation** for many years. 7,8 More **recently**, investigators have demonstrated a unique safety profile and ablative efficacy related to its ability to selectively target cardiomyocytes while sparing collateral tissue. This has propelled PFA into the spotlight as a novel energy source for **cardiac ablation**.

## [Application of Pulsed Electric Fields to Cancer Therapy ...](#)

<https://www.liebertpub.com/doi/full/10.1089/bioe.2018.0001>

**Pulsed electric fields** have been used in **cancer** therapy for the past three decades. For the treatment of surface skin lesions, millisecond- and microsecond-domain pulses have been used to treat thousands of patients in many European countries.

Cited by: 1

Author: NuccitelliRichard

Publish Year: 2019

## [Upregulation of PDGF Mediates Robust Liver Regeneration ...](#)

<https://www.hindawi.com/journals/bmri/2020/3635787> ▼

3.1. nsPEF Is Safe for **Liver Ablation**. To investigate the safety of **liver ablation** by nsPEF, serum levels of ALT and AST were monitored regularly in 2 weeks after **ablation**. **Serum** levels of ALT and AST rapidly increased to a peak concentration in 24 hours, respectively, for ...

Author: Junjie Qian, Jianpeng Liu, Liangjie Ho... Publish Year: 2020

## [Pulsed electric fields and currents for cancer therapy.](#)

Search To

Turn off Hover





15,800 Results

Any time ▾

## [Pulsed Field Ablation for PVI in AF - American College of ...](#)

<https://www.acc.org/latest-in-cardiology/articles/...> ▾

Dec 17, 2019 · **Pulsed field ablation (PFA)** is a nonthermal energy modality that has been utilized for both gene electrotransfer and solid **organ tumor ablation** for many years. 7,8 More **recently**, investigators have demonstrated a unique safety profile and ablative efficacy related to its ability to selectively target cardiomyocytes while sparing collateral tissue. This has propelled PFA into the spotlight as a novel energy source for **cardiac ablation**.

## [Application of Pulsed Electric Fields to Cancer Therapy ...](#)

<https://www.liebertpub.com/doi/full/10.1089/bioe.2018.0001>

These **fields** can generate both reversible and **irreversible electroporation** (IRE) depending on the amplitude of the **pulsed electric field**. **Pulses** in this domain have been used quite extensively in **cancer therapy**. The two main therapies utilizing **pulses** of 100-μs duration are ECT and IRE.

Cited by: 1

Author: NuccitelliRichard

Publish Year: 2019

## [Upregulation of PDGF Mediates Robust Liver Regeneration ...](#)

<https://www.hindawi.com/journals/bmri/2020/3635787> ▾

**Nanosecond pulsed electric field** (nsPEF) has emerged as a promising tool for **hepatocellular carcinoma ablation recently**. However, little is known about how nsPEF affects **liver regeneration** while being applied to eliminate **liver lesions**. Besides, the impact of **nsPEF ablation** on **liver function** should also be taken into consideration in the **process**.

Author: Junjie Qian, Jianpeng Liu, Liangjie Ho... Publish Year: 2020

## [Pulsed electric fields and currents for cancer therapy.](#)

<https://ir.canterbury.ac.nz/handle/10092/12941> ▾

The **radio frequency ablator** system was used to **ablate fresh animal liver** successfully and reliably with very similar characteristics to standard **commercial radio frequency ablation systems**, creating an average lesion of 2.7 cm<sup>3</sup> for a 2 cycle 20 W **ramped ablation protocol** lasting 5 minutes.

Author: Thomas Frederick Cronjé Publish Year: 2016