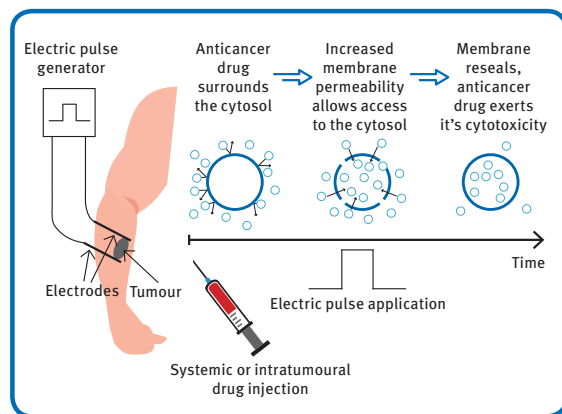


## What is Electrochemotherapy?

Electrochemotherapy is a combination therapy using electroporation with a cytotoxic agent, usually Bleomycin. The treatment consists of a single intravenous or intratumoural injection followed by a local application of electrical pulses. The electrical current increases the cell membranes permeability therefore permitting the Bleomycin to access the cytosol and exert its cytotoxic effect. Electrochemotherapy can be a single treatment option but also may be used multiple times if required. The treatment can be performed under general anaesthesia or with local anaesthesia. It can be used adjuvantly or neo-adjuvantly with bulky tumours.



## Why Electrochemotherapy

- Highly effective regardless of histology: response rate 80% - 100%
- Tissue sparing technique
- Selective cytotoxicity among tumour cells
- Stimulation of immune response through the prolonged release of intact tumour antigens
- Completion therapy: Neo-adjuvant and Adjuvant

- Repeatable treatment
- Day case or short hospitalization
- NICE Guidance: Interventional procedures guidance [IPG446] [IPG447] [IPG478]

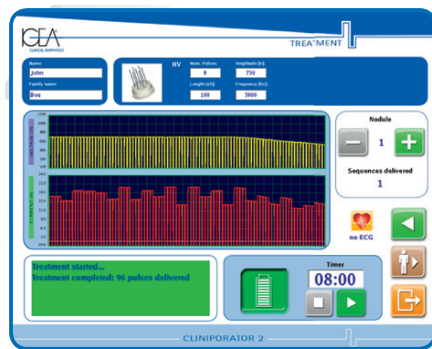
## Clinical Indications

### Primary disease:

- Basal cell carcinoma
- Locally advanced Squamous cell carcinoma
- Locally advanced Soft tissue sarcomas
- Locally advanced Angiosarcomas
- Viral Warts

### Recurrent disease or disease metastatic to the skin:

- Squamous and Basal cell carcinomas
- Melanoma
- Breast cancer
- Kaposi's sarcoma
- Head and neck cancers
- Vulval Cancer
- Sarcomas
- Merkel Cell Carcinoma
- Cutaneous metastasis from internal organs (e.g. kidney, lung, thyroid, etc.)
- Bleeding and ulcerated lesions
- Lesions refractory to other treatment modalities



## Exclusion Criteria

- Allergy or hypersensitivity to Bleomycin or Cisplatin.
- Cumulative Bleomycin dose of 400.000IU.
- Peripheral neuropathy > grade 2.
- Epilepsy only if not well controlled when addressing
- lesions of the skull.
- Pregnancy/Lactation: adequate contraception is required.
- History of pulmonary fibrosis will preclude the administration of intravenous bleomycin; intra-tumoral drug (Bleomycin or Cisplatin) administration can be an option.
- Treatment to be performed on tumours infiltrating major vessels (e.g. H&N vessels).
- Full-thickness or cartilage infiltration of the anatomical structure i.e. cheek, lip, nose.



## Further information can be found at:

[www.igeamedical.com](http://www.igeamedical.com)

IGEA UK, Suites 1 & 2, Parkhill Business Centre Annexe, Walton Road, Wetherby, West Yorkshire LS22 5DZ

Phone +44 1937 547065

[www.igeamedical.co.uk](http://www.igeamedical.co.uk)

[info.uk@igeamedical.com](mailto:info.uk@igeamedical.com)



## Electrochemotherapy service

**Referrals to  
Queen Victoria Hospital  
NHS Foundation Trust**



**CLINIPORATOR™**  
LEADING CLINICAL ELECTROPORATION



### When to refer

- Small ( $\varnothing \leq 3$  cm) and limited lesions in order to avoid disease progression and the associated symptoms.
- Large or numerous lesions to provide local tumour control and improve quality of life.
- Before or between cycles of chemotherapy.

### Further Detail

#### ECG

ECG before treatment depends on the location of the nodules. i.e. less important if the nodules are on the limbs and more important if on the trunk. It also depends on the patient's pre-morbid condition i.e. cardiac history, lung function. It is highly recommended in the case of manifest cardiac arrhythmia or previous cardiac event. The presence of pacemaker is not a contraindication to treatment.

#### Haematology

1. Full Blood Count.
2. INR: An INR > 1.5 precludes invasive treatment (i.e. needle insertion).
3. Platelets: If Platelets < 70,000/mm<sup>3</sup> then haematological opinion regarding the risk of bleeding versus the benefit of therapy should be sought. The clinician can then make an informed decision.

#### Biochemistry

U&E (Creatinine should be < 150  $\mu$ mol/l to ensure adequate renal clearance). Dose reduction is possible in suitable cases with high creatinine.

#### Toxicity

Lung function to be considered if any pre-existing lung disease.

### How to refer



#### Mr Brian Bisase

Consultant Maxillofacial / Head & Neck Surgeon Specialist interests: Head and neck cancer ablation and reconstruction, including micro-vascular surgery and surgical dermatology; maxillofacial trauma surgery; salivary gland disease and routine oral surgery.

Contact secretary: Denise Moore  
Email: [electrochemotherapyreferrals@nhs.net](mailto:electrochemotherapyreferrals@nhs.net)  
Tel: 01342 414000 Ext 4601



#### Mr Siva Kumar

Consultant Plastic Surgeon  
Specialist interest: Skin cancer; microsurgical reconstruction; trauma; breast and general plastic surgery.

Contact secretary: Julie Wanstall  
Email: [electrochemotherapyreferrals@nhs.net](mailto:electrochemotherapyreferrals@nhs.net)  
Tel: 01342 414027

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