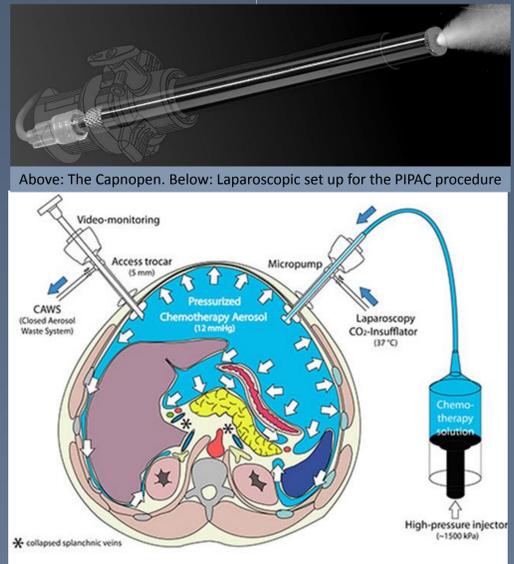


## What is PIPAC?

- The delivery of aerosolised chemotherapy drugs during laparoscopic surgery.
- Uses standard intraperitoneal (IP) chemotherapy drugs at 10-20% of the usual dose.

There are two key hypotheses in the rationale behind PIPAC:

- IP chemotherapy is superior to systemically administered chemotherapy for the treatment of isolated peritoneal metastases.
- Delivery of a pressurised aerosol of chemotherapy has pharmacological advantages over administering a liquid solution.



## Who is it for?

- Patients with isolated peritoneal metastases, from cancer of multiple origins including ovarian (OC), gastric (GC), colorectal (CRC), pancreatic (PC), malignant mesothelioma (MM), and pseudomyxoma peritonei (PP).
- Patients who have disease which has progressed despite systemic chemotherapy.
- Caution is advised in patients with massive ascites as drainage of the peritoneal cavity is required for PIPAC, and additional cardiovascular monitoring and support may be required.
- Symptomatic bowel obstruction is a contra-indication.

## What is the evidence?

We present a systematic review of the literature. A search of Medline and Embase was carried out using the terms 'PIPAC', 'ePIPAC', 'aerosol\$ adj3 chemotherapy' and 'pressuri\$ adj3 chemotherapy'.

Identification		Screening	Eligibility	Studies Included		
Records identified through searching EMBASE and MEDLINE (n=340)	Additional records from other sources (n=0)	Records screened on the basis of title and abstract (n=261)	Full text articles assessed for eligibility (n=23)	TOTAL number of studies presenting data on the outcomes of interest (n=19)	Studies excluded: Case reports (n=3), did not present data relating to the chosen outcomes of interest for this review (n=4).	
Total = 340		Full text obtained for eligibility assessment (n=23)		Studies reporting safety data (n=15)		
Total after duplicates removed =261		Excluded: • Not a study of PIPAC/related science (n=185) • In-vitro studies of PIPAC (n=11) • Animal studies of PIPAC (n=7) • Multiple publications (n=18) • Study of PIPAC, not English (n=4) • Review article (n=11) • Does not present data relating to outcomes of interest (n=2)		Studies reporting efficacy/survival data (n=12)		
				Studies reporting Quality of Life data (n=5)		

Study Characteristics		Safety	Efficacy	Quality of Life
		Adverse events recorded (CTCAE v4.0; Grade 1 = Mild, Grade 2 = Moderate, Grade 3 = Severe, Grade 4 = Life Threatening, Grade 5 = Death.)	Histological assessment of serial peritoneal biopsies +/- survival statistics.	Validated questionnaire before and after treatment.
Cohort Study	<b>Prospective</b>			
	<b>Retrospective</b>			
	<b>Prospective</b>			
	<b>Retrospective</b>			
Case series	<b>Prospective</b>			
	<b>Retrospective</b>			
	<b>Prospective</b>			
	<b>Retrospective</b>			
	<b>Prospective</b>			
	<b>Retrospective</b>			
	<b>Prospective</b>			
	<b>Retrospective</b>			
	<b>Prospective</b>			
	<b>Retrospective</b>			

## Conclusions:

- The literature to date supports further investigation of this technique.
- PIPAC has an acceptable safety profile, and appears to be tolerated by this patient group.
- There is insufficient evidence at present to recommend introducing the technique into routine practice, but research is ongoing and UK centres could take part in future clinical trials.

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