



Universiteit
Leiden
The Netherlands

ASO Visual Abstract: the role of adjuvant use of the PlasmaJet (R) device during cytoreductive surgery for advanced-stage ovarian cancer-results of the PlaComOv-Study, a randomized, controlled trial in the Netherlands

Nieuwenhuyzen-de Boer, G.M.; Hofhuis, W.; Reesink-Peters, N.; Willemsen, S.; Boere, I.A.; Schoots, I.G.; ... ; Beekhuizen, H.J. van

Citation

Nieuwenhuyzen-de Boer, G. M., Hofhuis, W., Reesink-Peters, N., Willemsen, S., Boere, I. A., Schoots, I. G., ... Beekhuizen, H. J. van. (2022). ASO Visual Abstract:: the role of adjuvant use of the PlasmaJet (R) device during cytoreductive surgery for advanced-stage ovarian cancer-results of the PlaComOv-Study, a randomized, controlled trial in the Netherlands. *Annals Of Surgical Oncology*, 29, 4846-4847. doi:10.1245/s10434-022-11820-w

Version: Publisher's Version

License: [Licensed under Article 25fa Copyright Act/Law \(Amendment Taverne\)](#)

Downloaded from: <https://hdl.handle.net/1887/3577283>

Note: To cite this publication please use the final published version (if applicable).



ASO Visual Abstract: The Role of Adjuvant Use of the PlasmaJet[®] Device During Cytoreductive Surgery for Advanced-Stage Ovarian Cancer—Results of the PlaComOv-Study, a Randomized, Controlled Trial in the Netherlands

G. M. Nieuwenhuyzen-de Boer, MD^{1,9}, W. Hofhuis, MD, PhD², N. Reesink-Peters, MD, PhD³, S. Willemsen, PhD^{4,5}, I. A. Boere, MD, PhD⁶, I. G. Schoots, MD, PhD⁷, J. M. J. Piek, MD, PhD⁸, L. N. Hofman, MD⁹, J. J. Beltman, MD, PhD¹⁰, W. J. van Driel, MD, PhD¹¹, H. M. J. Werner, MD, PhD¹², A. Baalbergen, MD, PhD¹³, A. M. L. D. van Haaften-de Jong, MD¹⁴, M. Dorman, MD¹⁵, L. Haans, MD¹⁶, I. Nedelcu, MD¹⁷, P. C. Ewing-Graham, MD¹⁸, and H. J. van Beekhuizen, MD, PhD¹

¹Department of Gynecologic Oncology, Erasmus MC Cancer Institute, University Medical Center Rotterdam, Rotterdam, The Netherlands; ²Department of Obstetrics and Gynecology, Franciscus Gasthuis and Vlietland, Rotterdam, The Netherlands; ³Department of Obstetrics and Gynecology, Medisch Spectrum Twente, Enschede, The Netherlands; ⁴Department of Epidemiology, Erasmus MC, Rotterdam, The Netherlands; ⁵Department of Biostatistics, Erasmus MC, Rotterdam, The Netherlands; ⁶Department of Medical Oncology, Erasmus MC Cancer Institute, University Medical Center Rotterdam, Rotterdam, The Netherlands; ⁷Department of Radiology and Nuclear Medicine, Erasmus MC Cancer Institute, University Medical Center Rotterdam, Rotterdam, The Netherlands; ⁸Department of Obstetrics and Gynecology, Catharina Cancer Institute, Eindhoven, The Netherlands; ⁹Department of Obstetrics and Gynecology, Albert Schweitzer Hospital, Dordrecht, The Netherlands; ¹⁰Department of Obstetrics and Gynecology, Leiden University Medical Centre, Leiden, The Netherlands; ¹¹Department of Gynecology, Center of Gynecological Oncology Amsterdam, Netherlands Cancer Institute, Amsterdam, The Netherlands; ¹²Department of Obstetrics and Gynecology, GROW, School for Oncology and Developmental Biology, Maastricht University Medical Centre, Maastricht, The Netherlands; ¹³Department of Obstetrics and Gynecology, Reinier de Graaf Gasthuis, Delft, The Netherlands; ¹⁴Department of Obstetrics and Gynecology, Haga Hospital, The Hague, The Netherlands; ¹⁵Department of Obstetrics and Gynecology, Bravis Hospital, Bergen op Zoom, The Netherlands; ¹⁶Department of Obstetrics and Gynecology, Haags Medical Centre, The Hague, The Netherlands; ¹⁷Department of Obstetrics and Gynecology, Groene Hart Hospital, Gouda, The Netherlands; ¹⁸Department of Pathology, Erasmus MC Cancer Institute, Rotterdam, The Netherlands

A total of 327 patients with FIGO stage IIIB-IV epithelial ovarian cancer (EOC) who underwent primary or interval cytoreductive surgery (CRS) were randomized to surgery with neutral argon plasma (PlasmaJet[®]) (intervention) or without PlasmaJet (control group) (<https://doi.org/10.1245/s10434-022-11763-2>).

Primary outcome was the percentage of complete CRS. Secondary outcomes were duration of surgery, blood loss, number of bowel resections and colostomies, hospitalization, 30 day-morbidity, and quality of life. The adjuvant use of the PlasmaJet during CRS for advanced-stage ovarian cancer resulted in a significant higher proportion of complete CRS in patients with resectable disease and a higher quality of life 6 months after surgery. (Funded by ZonMw, Trial Register NL62035.078.17.).

Improvement of Complete Cytoreduction for Advanced-Stage Ovarian-Cancer With Adjuvant Use of the PlasmaJet® Device

Results of the PlaComOv-Study, a Randomized, Controlled Trial in the Netherlands

BACKGROUND

The most important prognostic factor for patients with advanced-stage ovarian cancer is complete cytoreductive surgery (CRS). Standard surgical treatment with electrosurgery cannot always result in complete CRS, especially when many small metastases are found on the intestinal mesentery and intestinal surface. We investigated whether adjuvant use of the PlasmaJet® Device will help increase the complete cytoreduction rate.

MATERIAL & METHODS

Patients (327) with FIGO stage IIIB-IV epithelial ovarian cancer (EOC) who underwent primary or interval CRS were assigned to either surgery with PlasmaJet (intervention) or without PlasmaJet (control group).

Primary outcome: percentage of complete CRS.

Secondary outcomes: duration of surgery, blood loss, number of bowel resections and colostomies, hospitalization, 30 day-morbidity and quality of life (QoL).

Table I: Patient characteristics

Intervention		Control
66.1	Age (years)	65.1
	WHO (%)	
52	0	53
41	1-2	36
2	3-4	3
24.6	BMI (kg/m ²)	25.7
	FIGO stage (%)	
68	III	71
32	IV	29
	CRS (%)	
13	primary	15
87	interval	85
71	peritonitis ca CT (%)	76
19	HIPEC (%)	19

Figure I: Number of inclusions

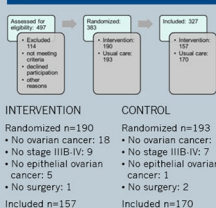


Figure III: Complete CRS (per protocol analysis)

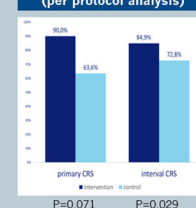


Figure II: Complete CRS

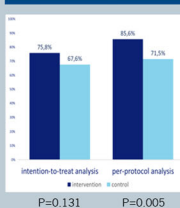


Figure IV: Complete CRS (per protocol analysis)

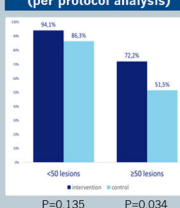
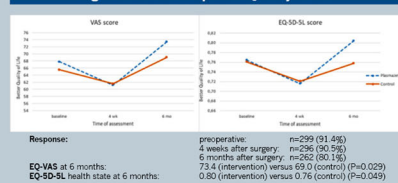


Figure V: Patient reported Quality of life



RESULTS

Complete CRS was achieved in 119 patients (75.8%) of the intervention group and in 115 patients (67.6%) of the control group (RD = 8.2%, 95% CI: -0.181; P=0.131).

A per-protocol analysis was performed in which data of 27 patients with unresectable disease were excluded, considering that the aim of the study was to examine the effectiveness of the use of the PlasmaJet in achieving CRS. Complete CRS was obtained in 85.5% in the intervention group and in 71.5% in the control group (RD = 14.1%, 95% CI: 0.047-0.230; P=0.005).

Patient reported QoL six months after surgery differed between groups in favor of PlasmaJet surgery (95% CI: 0.455-8.350; P=0.029). Other secondary outcomes will follow.

CONCLUSIONS

The adjuvant use of the PlasmaJet during CRS for advanced stage ovarian cancer resulted in a significant higher proportion of complete CRS in patients with resectable disease and a higher QoL six months after surgery.

This study was funded by ZonMw, Trial Register NL62035.078.17 and supported by patient association Olijf.

Neuwenhuyzen-de Boer GM, et al. *Ann Surg Oncol*.
 Visual Abstract for @AnnSurgOncol

ANNALS OF
**SURGICAL
 ONCOLOGY**

DISCLOSURE Ingrid A. Boere—translational research (ctDNA) to the employer (Erasmus MC Cancer Institute) grant by GSK. Nieuwenhuyzen-de Boer—Grant from ZonMw received for the project. No relevant conflicts of interest.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.