

January 12, 2015

Dear Editor,

Please find enclosed the edited manuscript in Word format (file name: 15895-review.doc).

Title: Clinical impact of endoscopy position detecting unit (UPD-3) for colonoscopy under non-sedated condition

Author: Masakatsu Fukuzawa, Junichi Uematsu, Shin Kono, Sho Suzuki, Takemasa Sato, Naoko Yagi, Yuichiro Tsuji, Kenji Yagi, Chika Kusano, Takuji Gotoda, Takashi Kawai, Fuminori Moriyasu.

Name of Journal: *World Journal of Gastroenterology*

ESPS Manuscript NO: 15895

The manuscript has been improved according to the suggestions of reviewers:

1 Format has been updated

2 Revision has been made according to the suggestions of the reviewer

Reviewer 1

Comment to the Author

Major Comment

- (1) **This is a retrospective case control study as the authors mentioned in the discussion paragraph. However, in the Methods paragraph, the authors described that all data were appeared to be collected prospectively. The authors should described precise inclusion schema of this study.**

Response:

Thank you for your constructive comments. All colonoscopies were performed in four rooms. Conventional colonoscopies were performed in three rooms and UPD-3 guided colonoscopies were performed in one room in parallel. Finally, the number of patients was paired between 2 group and performed retrospective analyses. We added inclusion schema as Figure1 and these sentences in the **Patients** paragraph as follows. (page7, line3-11).

“ All patients were informed of the risks and benefits of colonoscopy, and all patients provided written informed consent to receive colonoscopy. Between February 2012 and June 2012, a total of 260 patients (171 men and 89 women) were received colonoscopy divided into the UPD-3-guided group or the conventional group (no UPD-3 guidance). All colonoscopies were performed in four rooms. Conventional colonoscopies were performed in three rooms and UPD-3 guided colonoscopies were performed in one room in parallel. Finally, the number of patients was paired between 2 group and performed retrospective analyses (Figure1).”

- (2) **The number of excluded procedures due to technical difficulties are significant result. These results (4 patients of the conventional group and 2 patients of UPD-3) should be included into “Table 2” with P-value.**

Response:

These results (4 patients of the conventional group and 2 patients of UPD-3) included into "Table 2" with P-value.

- (3) In the "Results", the authors described "However, univariate analysis showed that only for the TC group, straight insertion methods and UPD-3 guidance were related to lower VAS pain scores during colonoscopy insertion. After controlling for other covariates in the multivariate model, the same 2 factors were found to significantly affect VAS pain scores during colonoscopy insertion (Table 3)." These results were not shown in Table3. And also, the title of Table 3 was mistaken.

Response:

Thank you for your comments. We added these results in replaced Table 4 as titled "Univariate and multivariate analysis of the factors affecting VAS pain scores for colonoscopy insertion by trainees". And the title of Table 3 was replaced as "Univariate and multivariate analysis of the factors affecting VAS pain scores for colonoscopy insertion."

- (4) In Table 3, four factors were included into multivariate analysis. Possible significant factor, such as "Gender" should be included into multivariate analysis to adjust possible bias. Because difference of gender was appeared to affect VAS in the expert group.

Response:

Thank you for your comments. Possible significant factor about gender was included into multivariate analysis to adjust possible bias. Table 3 was replaced.

- (5) In the "Results", the authors described "For the EC group, univariate and multivariate analysis showed that only the insertion method (straight insertion methods) was related to lower VAS pain scores during colonoscopy insertion (Table 4)." The result of multivariate analysis was not shown in Table4.

Response:

Thank you for your comments. The result of multivariate analysis was added in Table5 as titled "Univariate and multivariate analysis of the factors affecting VAS pain scores for colonoscopy insertion by Expert". Table 5 was replaced.

- (6) In "Discussion", the authors described as "As an initial approach, it may be possible to reduce the pain involved in colonoscopy insertion by providing trainees with the opportunity to master the straight insertion technique combined with a UPD-3." The authors did not elucidate these points.

Response:

Thank you for your comments. " Univariate analysis showed that only for the TC group, straight insertion methods and UPD-3 guidance were related to lower VAS pain scores during colonoscopy insertion. After controlling for other covariates in the multivariate model, the same 2 factors were found to significantly affect VAS pain scores during colonoscopy insertion." These sentences in the **Results** paragraph were added as Table 4 as titled "Univariate and multivariate analysis of the factors affecting VAS pain scores for colonoscopy insertion by trainees" . We described it in **discussion** paragraph based on these results about Table 4.

Minor Comment

- (1) In page 11 on line 5, "Table 4" is miss-typed. (Table 3?)

Response:

Thank you for your helpful comments. "Table 4" replaced in "Table 3". Thank you.

Reviewer 2

Comment to the Author

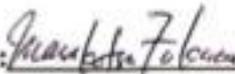
(1) Scope Guide is a proprietary technology from Olympus <http://medical.olympusamerica.com/products/endoscope-positioning-system/scopeguide-upd-3>. The manuscript needs to be revised to address how this technology was provided to the investigators and the ownership of this proprietary technology

Response:

Thank you for your helpful comments. We added the explanations in the **Endoscopy position detecting unit (UPD-3)** section as follows, (page10, line 10-20)

"A magnetic imaging system of colonoscope (Unit of Position Detection: UPD, Olympus Optical Co., Ltd.) provides a new facility for viewing real-time three-dimensional (3D) images of the shape and configuration of the colonoscope inside the body, without exposing patients or medical staff to radiation. ScopeGuide UPD-3 is designed to provide Electromagnetic coils incorporated along the length of the colonoscope's insertion tube generate a pulsed low-intensity magnetic field that is picked up by the receiver dish. The magnetic pulses are used to calculate the precise position and orientation of the colonoscope. A new, improved UPD-3 is now available with a monitor on with a monitor to provide the endoscopic image (F

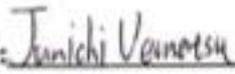
Name: Masakatsu Fukuzawa

Signature:  Date: Jan, 7, 2015

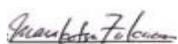
3 References and

Thank you again.

Name: Junichi Uematsu

Signature:  Date: Jan, 7, 2015

Sincerely yours,



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