



A Shortened Fasting Time for Semifluid Diet Prior to Esophagogastroduodenoscopy: Achievement of Patient Comfort, Endoscopic Visibility, and Safety

Jae Yong Park

Department of Internal Medicine, Chung-Ang University College of Medicine, Seoul, Korea

Corresponding Author

Jae Yong Park

ORCID <https://orcid.org/0000-0001-6114-8920>

E-mail jay0park@cau.ac.kr

See “Four-Hour Fasting for Semifluids and 2-Hour Fasting for Water Improves the Patient Experience of Esophagogastroduodenoscopy: A Randomized Controlled Trial” by Meng-Xi Cai, et al. on page 382, Vol. 17, No. 3, 2023

Esophagogastroduodenoscopy (EGD) is a common procedure used to evaluate and treat various gastrointestinal conditions, which can be associated with patient anxiety and apprehension. The success and safety of this procedure rely on appropriate patient preparation, including adequate fasting prior to the procedure to ensure patient safety and mucosal visibility. The current standard practice for fasting before EGD is typically 6 to 8 hours for solid food.^{1,2} However, despite the evidence in favor of short preprocedural fasting durations, fasting from midnight is usually requested in actual clinical settings regardless of the scheduled time of the procedure. The total fasting duration in real world situation is therefore often much longer than the guideline, which can cause discomfort and even adverse events such as hypoglycemia.³ This practice needs to be reconsidered, since there are now growing interest on patient experience and demand for quality control in the fields of endoscopic procedures.

Recent studies have shown that shorter fasting times may be just as effective, but with fewer side effects. In this context, the study by Cai *et al.*,⁴ published in the current issue of *Gut and Liver*, adds to the growing body of evidence supporting shorter fasting times before EGD. This was a single-blind, randomized controlled study of 214 patients undergoing unsedated diagnostic EGD, aimed to investigate the efficacy of a modified 4-hour semifluid and 2-hour water (“4+2”) fasting protocol. Participants were randomized 1:1 to either the intervention or control group. The intervention group followed the “4+2” protocol, which involved ingesting 300 g of rice porridge 4 hours before the EGD appointment time and drinking <300 mL of clear water until 2 hours before

the procedure. The control group followed the conventional protocol of fasting after midnight, with clear water allowed until 2 hours before the procedure. The participants’ comfort, procedural safety, and endoscopic visibility were evaluated.

Both the proportion of satisfaction (86.8% vs 63.9%, $p=0.002$) and the visual analog scale score ($p<0.001$) showed that participants’ comfort before EGD was considerably higher in the “4+2” protocol group. The percentage of satisfaction during EGD was also considerably increased (59.4% vs 45.4%, $p=0.039$) in this group. They were significantly more willing to (84.9% vs 75.0%, $p=0.037$) adopt the same fasting protocol for another EGD. Meanwhile, the fasting protocol had no impact on the overall visibility score ($p=0.266$), and all four gastric domains’ visibility scores showed no discernible variation either. All of the participants in the intervention group showed clean gastric mucosa, sometimes with little mucus only. The examination time was not significantly different between the two groups (308 seconds vs 311 seconds, $p=0.522$). Particularly, there were no documented adverse events, including aspiration, bleeding, infection, or perforation during the study.

The findings of this study have practical implications for clinical practice. Shorter fasting time before EGD may improve the patient experience by reducing the discomfort and inconvenience associated with prolonged fasting time. Moreover, it was safe and did not compromise the quality of the procedure. A 4-hour fasting period for semifluid and a 2-hour fasting period for water might be feasible and effective alternatives to the current standard practice of 8-hour fasting. These findings are consistent with previous studies

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that have shown similar results in terms of safety and efficacy of shorter fasting time before EGD. De Silva *et al.*⁵ found that a 1-hour water fast group experienced significantly less discomfort prior to EGD than a 6-hour fasting group without compromising safety and endoscopic visibility. Another study by Koeppe *et al.*⁶ showed that elective EGD after 2 hours fasting for clear liquids was more comfortable in terms of anxiety, general discomfort, hunger and weakness, and equally safe compared to conventional fasting.

The present study by Cai *et al.* has additional implication in that they demonstrated the feasibility of semifluid diet in the shortened fasting protocol. It is known that gastric emptying is mainly influenced by the consistency and components of the meal.^{7,8} The semifluid meal used in this study was rice porridge, only including carbohydrate and protein. This nutrient composition might be important, as high fat content might lead to the delay in gastric emptying.⁸

Interestingly, participants' comfort was also significantly improved during the EGD with "4+2" protocol. Although the reason for this result was unclear, the stress level might have decreased due to the increased energy supply, along with possible reduction of negative experiences related to hunger, decreasing sensitivity to stimuli during EGD.

However, it is important to note that the results of this study should be interpreted with caution due to some limitations. Patients on proton pump inhibitors, having diabetes or prior history of upper gastrointestinal surgery, or undergoing therapeutic endoscopy were not included in the analysis. As we can easily anticipate, liberalizing fasting periods would not be suitable for all patients. More studies are needed to confirm these findings and assess their generalizability to different patient populations and clinical settings. Practitioners should consider the potential impact of patient factors, such as comorbidities and medication use, on the safety and efficacy of shorter fasting times prior to EGD.

Despite these limitations, this study highlights the need to reconsider the current standard practice of 8-hour fasting before EGD. Given that most patients undergoing non-emergent EGD are not in critical condition, the overall experience for these patients may be improved without compromising clinical outcomes by identifying lower risk individuals who can endure shorter fasting time. Furthermore, shorter fasting times may increase patient compliance with the procedure and improve the efficiency of endoscopy units.

Future studies are warranted, focusing on fasting time of different types and volumes of semifluid or other subpopulations of participants undergoing EGD to provide patient-oriented, individualized protocols for gastric preparation. For this purpose, initiatives such as development of proper diet formula and studies on risk factors for delayed gastric emptying would be necessary. Efforts should be made to achieve both goals of patient comfort and a safe

and accurate examination.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

ORCID

Jae Yong Park <https://orcid.org/0000-0001-6114-8920>

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