



## Correspondence

## Re: quantitative factors of unenhanced CT for predicting fragmenting efficacy of extracorporeal shock wave lithotripsy on pancreatic duct stones



Sir—We read with much interest the recently published article about predicting fragmenting efficacy of extracorporeal shock wave lithotripsy (ESWL) on pancreatic duct stones for chronic pancreatitis (CP) by unenhanced computed tomography (CT).<sup>1</sup> Predicting the efficacy of ESWL is meaningful; however, the study needs to be improved.

First, the timing of the second unenhanced computed tomography (CT) was not clear; namely, whether CT was conducted right after ESWL or after endoscopic retrograde cholangiopancreatography (ERCP). As European Society of Gastrointestinal Endoscopy Guideline suggests,<sup>2</sup> ERCP is needed for patients without spontaneous clearance of pancreatic stones after adequate fragmentation using ESWL. Therefore, some patients only underwent ESWL whereas others had undergone ERCP after ESWL to extract the stones. Approximately 56% to 81% of CP patients need to undergo ERCP after ESWL.<sup>3,4</sup> Stone extraction during ERCP may increase the stone clearance rate (SCR); however, the treatment regimen was not mentioned in the article. Thus, the SCR in the present study is probably the mixed evaluation of ESWL and ERCP, which does not reflect the SCR after ESWL.

Second, this is a retrospective study, which is mentioned in the Methods. All of the 106 patients selected in the present study had undergone unenhanced CT after ESWL therapy; however, CT was not part of the regular protocol for patients after ESWL in clinical practice. CT is only arranged for patients with suspected complications related to ESWL (including acute pancreatitis, bleeding, infection, steinstrasse, and perforation).<sup>5</sup> Therefore, selection bias of patients may exist. In addition, the occurrence of complications may affect the clearance of pancreatic stones, which may affect the calculated SCR.

Third, the standard definition of SCR was based on main pancreatic duct (MPD) stones and complete clearance was defined as clearance of >90% of the MPD stone volume and

partial clearance as clearance of 50–90% of the MPD stone volume according to previous studies.<sup>6,7</sup> The present study included all pancreatic duct stones of both MPD and branch ducts. Hence, it would be better if the author analysed the subgroups of pancreatic stones (MPD stones, branch duct stones, and both), which would make the prediction more precise.

Fourth, X-tile software was used to determine the cut-off value of mean stone density. Follow-up or survival time is an essential variable in X-tile analysis to determine the cut-off value<sup>8</sup>; however, the follow-up time was missing in this study. Therefore, the result may be inaccurate.

### References

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