

# Improved *Helicobacter pylori* Eradication Rate of Tailored Triple Therapy by Adding *Lactobacillus delbrueckii* and *Streptococcus thermophilus* in Northeast Region of Thailand: A Prospective Randomized Controlled Clinical Trial

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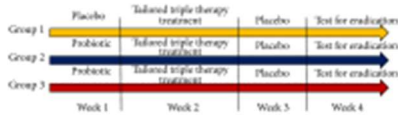
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## Abstract

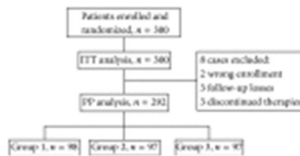
**Background and Aim.** To evaluate the effect of *Lactobacillus delbrueckii* subsp. *bulgaricus* and *Streptococcus thermophilus* to *Helicobacter pylori* eradication in different periods of therapeutic protocol. **Methods.** Infected patients were randomized to one-week tailored triple therapy (esomeprazole 20 mg bid, clarithromycin 500 mg bid/metronidazole 400 mg tid if clarithromycin resistant, and amoxicillin 1000 mg bid) with placebo (group 1, n=100); one week of pretreatment with probiotics (group 2, n=100); and one week of pretreatment with probiotic followed by one week of the same probiotics after treatment (group 3, n=100). **Result.** PP analysis involved 292 patients, 98 in group 1, 97 in group 2, and 97 in group 3. Successful eradication was observed in 229 patients; by PP analysis, the eradication rates were significantly higher ( $P<0.01$ , 95% CI; 0.71-0.97) in group 2 and group 3 than group 1. ITT analysis eradication rates were significantly higher in group 2 and group 3 than group 1 ( $P<0.01$  95% CI; 0.72-0.87), and there is no significant difference between the three groups ( $P=0.32$ ) in terms of adverse events. **Conclusion.** Adding probiotics before or before and after tailored treatment can improve *Helicobacter pylori* eradication rates. This trial is registered with Thai Clinical Trials Registry number: TCTR20141209001.

## Figures



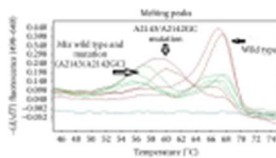
**Figure 1**

Flowchart of the study. Probiotic:...



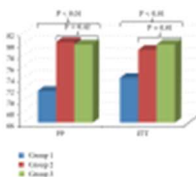
**Figure 2**

Flow diagram showing numbers of...



**Figure 3**

Pattern of clarithromycin resistance from...



**Figure 4**

*Helicobacter pylori* eradication rate (ITT:...

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