



## Real-time ultrasonic observation on the relationship between the cholagogic action of Yin Chen Hao Tang and gallbladder circadian rhythm

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### Abstract

**AIM:** To explore gallbladder circadian rhythm (GCR) and the cholagogic action of Yin Chen Hao Tang (YCHT).

**METHODS:** Ultrasonography of rabbit gallbladder at 17:00 to 19:00, 23:00 to 01:00, 05:00 to 07:00 and 11:00 to 13:00 showed

its maximum area (MA), dilatation rate (GDR) and systole rate. Its movement circadian rhythm (MCR) and the effect of YCHT on gallbladder and the relationship with time were observed and evaluated.

**RESULTS:** The results showed that gallbladder area changed with time, which varied from 11:00 to 13:00 > 23:00 to 01:00 and 05:00 to 07:00 > 17:00 to 19:00 ( $P < 0.01$ ,  $F = 9.13$  vs control by analysis of variance). The cholagogic action at 23:00 to 01:00 and 17:00 to 19:00 was better than that at 11:00 to 13:00 and 05:00 to 07:00.

**CONCLUSION:** The gallbladder movement action (GMA) showed markedly circadian rhythm. The cholagogic action of YCHT at 23:00 to 01:00 and 17:00 to 19:00 is better. Traditional Chinese Medicine Bureau Foundation of Hebei Province, No. 96048.

**Key words:** Gallbladder/ultrasonography; Circadian rhythm; Cholagogues and cholergics; Yin Chen Hao Tang

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