Reviewer's report

Title: Predictors of gallstone composition in 1025 symptomatic gallstones from Northern Germany

Version: 1 Date: 5 August 2006

Reviewer: Karel van Erpecum

Reviewer's report:

General

Summary: In this manuscript, gallstone composition and demographic factors affecting gallstone composition were determined in 1074 patients from Germany, with the aid of Fourier transformed infrared spectrometry. Cholesterol was the most prevalent substance, and % cholesterol in stones was associated with BMI and female sex. Based on these results, the authors claim a shift in gallstone composition in recent decades, with less pigment and more cholesterol stones.

Major comments:
1. Previous studies were done in Western countries (for example the Netherlands: Scand J Gastroenterology 1988;23:948-54 and USA: Am J Dig Dis 1974;19:585-9). These studies generally indicated predominance of cholesterol stones, in agreement with the current (much larger) study. However, with increasing age, there is an increasing contribution of pigment stones in these previous studies, especially in the elderly. Unfortunately, in the present study, patients older than 65 years were excluded. This could significantly affect and bias results, and comparison with older studies becomes difficult. This limitation should be mentioned clearly. Also, in previous studies, cholesterol content was determined by chemical assay of cholesterol % in the stone, and cholesterol stones were defined as cholesterol content above 50% and pigment stones as stones with cholesterol content less than 20%. In contrast, in the current study, substances (e.g. cholesterol) were considered major if they comprised more than 30% of the gallstone. To enable comparison with the older studies, differentiation between cholesterol and pigment stones should be done according to the older criteria.
2. Ideally, results of Fourier transformed infrared spectrometry and chemical determination of stone cholesterol content should be done in a limited nr of stones, to confirm equivalence of these methods in the hand of the authors.
3. Patients were contacted by questionnaire. Data on % response should be given.
4. The information in the Tables appears excessive.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions.

Level of interest: An article whose findings are important to those with closely related research interests.

Quality of written English: Acceptable.

Statistical review: No.

Declaration of competing interests:
I declare that I have no competing interests.