

To: The Chairman of the Scientific Jury  
Medical University - Varna  
According to the Rector's Order R-109-452/06.11.23

### **REVIEW**

from Prof. Dr Atanas Stefanov Ionkov, MD, PhD- habilitated lecturer in Surgery; Executive Director of UMHAT “ Aleksandrovska and Head of Department General and operative surgery faculty of Medicine, MU-Sofia.

Subject: Dissertation „ **Postcholecystectomy syndrome- an update of an "old" problem. Diagnostic and advanced therapeutic strategy**“. to Assoc. Prof. Vasil Markov Bozhkov MD, PhD Head of Educational Center in Abdominal Surgery in the Department of Surgery, MU – Varna., for the award of scientific degree **“Doctor of Science”** in the field of higher education 7. "Health and Sport" in the professional field **7.1. "Medicine"** and scientific specialty **"Surgery"** .

Regulatory requirements:

1. Order of Rector of MU- Varna P-109-452/06.11.23
2. Protocol № 1/ 13.11.2023 from first session of the Scientific Jury I am elected to make official review.

The dissertation submitted to me for review is written in 250 standard pages and the followed structure: Introduction – 3 pp., literature review – 48 pp., Aim and tasks – 2 pp., Material -12 pp., Methods – 15 pp., Results – 9 pp., Discussion – 83 pp., Conclusions – 1 p., Contributions – 1 p., Publications related to the dissertations – 3 pp., Bibliography – 60 pp.

The literature review includes 510 sources, 17 in cyrillic and 493 in latin. The dissertation is illustrated with 45 figures, 12 tables and 29 images.

The dissertation thus meets the requirements of the Law for development of Academic Staff in the Republic of Bulgaria, the regulations for its application and the rules of Medical University - Varna.

### **Relevance of the dissertation:**

Laparoscopic cholecystectomy has become the gold standard in the treatment of gallstone disease in the twenty-first century. The following facts can be put forward as the reason for this: introduction of laparoscopic cholecystectomy by Muhe in 1986 and its application in the treatment of symptomatic GBD; shorter hospital stay, pain reduction, better cosmetic effect and less financial costs; the internet, which promotes laparoscopic cholecystectomy and its performance at a young age. Since the beginning of the 21st century, GBD and its complications are the most common cause of hospitalization in developed countries.

The indications for cholecystectomy are also expanding, as shown by the significant increase in the number of operations performed for acalculous cholecystitis.

On the other side, as a result of the facts above, the criteria for cholecystectomy have been lowered leading to an increase in rare complications of open cholecystectomy such as BDI, scattered biliary stones in the abdominal cavity, residual choledocholithiasis, cholangitis, etc.

This type of complications are the early ones on the side of the hepatobiliary system, which, if they occur in the early postoperative period, require urgent surgical intervention.

Over 15-20% of cholecystectomized patients report a variety of GIT complaints such as intolerance to fatty foods; nausea and/or vomiting; pyrosis; flatulence; poor digestion; chologenic diarrhea; intermittent to acute right upper quadrant abdominal pain, and according to various literature sources, the incidence of these complaints varies widely as high as 50%.

Postcholecystectomic syndrome (PCS) was first described by Womack and Crider in 1947. In 1950, Pribram was the first who proposed the name postcholecystectomy syndrome (PCS), which includes symptoms of biliary colic and/or persistent right upper quadrant pain with or without dyspeptic symptoms that are the same before cholecystectomy.

The literature review is 48 pages. It includes historical data, detailed anatomy of the gallbladder and extrahepatic bile ducts, definition and causes of postcholecystectomy syndrome. Assoc. Prof. Dr Bozhkov MD PhD presents imaging methods from the widely used ultrasound to the highly specialized ERCP. The most common bacterial isolates from biliary cultures are also indicated.

The literature review motivated Assoc. Prof. Dr Bozhkov MD PhD and he set the following aim: to survey, analyze and apply in clinical practice modern diagnostic and therapeutic strategy and treatment methods in patients with PCS in order to optimize outcomes, reduce complications and mortality in operated patients.

The five tasks that are its logical continuation.

The Material section presents a retrospective and prospective analysis of 1532 patients with GBD and its complications and 262 patients with PCS. A retrospective and prospective analysis was performed. Patients were separated by sex as those with PCS were 168 females and 94 males. The previous operation was Lc in 224 patients and open in 38 patients, indicating that the main reason for reoperation was a result of the LC performed. The most frequent causes of PCS

were as follows BDI - 75; choledocholithiasis - 64; stenosing papillitis - 42; liver abscess - 5; and d. cysticus remnant - 4 patients. The surgical interventions in these patients are also listed - hepaticojejunostomoses - 62; Kehr drainage - 6; Kehr drainage + T-T anastomosis 4 and ChDA -3 patients.

An algorithm for the diagnosis and treatment of PCS was developed as a result of literature analysis combined with own results.

The conclusions are six in number and show that they respond to the stated aim and objectives, namely:

The analysis of the literature has revealed that PCS is again become a actual problem, with the underlying cause being the wide application of laparoscopic cholecystectomy.

The results of the treatment of patients with PCS over a ten-year period showed that an individualized approach should be sought and chosen for each specific patient, with the best results in the surgical treatment of PCS, using external or internal biliary drainage.

BDI are a serious complication with an increasing incidence of great medical, social and economic importance.

The surgical techniques we applied provide longterm adequate biliary drainage and are characterized by low perioperative morbidity and lethality. At the same time, they provide a good quality of life for operated patients.

Internal biliary drainage is preferable to external biliary drainage. Endoscopic and minimally invasive procedures are applied early in the therapeutic process with subsequent surgical intervention if necessary.

The treatment of PCS requires an individualized multidisciplinary approach and a team of interventional radiologists, endoscopists, gastroenterologists and surgeons in specialized hepatobiliary centers.

I accept conclusions № 1,2,3,5 and 6. According conclusion № 4, I interpret the findings as significant, but in light of the general thesis defended in the dissertation, not in light of the specific problem № 4.

Assoc. Prof. Dr Bozhkov MD PhD has 10 publications connected to the dissertation.

Scientific indicators for the scientific degree "Doctor of Science" are fully covered

A1 -50p.;

B2 – 100p.;

G5-9 – 101,66p.;

D10 – 7p.

D10+D12- 105p.

#### Candidate's CV

Assoc. Prof. Dr Bozhkov MD PhD was born on 13.07.1973

He graduates Medicine in MU – Varna in 1998

**1999 – 2004** – specialization in surgery in Second Department of Surgery.

**2002** – surgeon in Second Department of Surgery, UMHAT “Saint Marina”

Varna

**2004** - acquires a specialty in Surgery.

**2007** – Assistant in Department of Surgery, MU – Varna.

**2013** – PhD “ Doctor“ - dissertation „*Diagnostic and therapeutic strategy in patients with cholangitis*“

**2015** - loan academic post "*Associate professor*" in surgery, in department of Surgery, MU-Varna (№82/18.12.2015)

**2016** – Head of Educational Center in Abdominal Surgery in the Department of Surgery, MU – Varna

Member of :

- Bulgarian Surgical Society– member of the Management Board
- Union of Scientists in Bulgaria – Varna
- BDU

Assoc. Prof. Dr Bozhkov MD PhD has specializations in European Centers – Bruxelles /2001/, Verona, Italy /2017/, Budapest, Hungary /2017/, Paris, France /2020/, IASGO (Pre-Congress course IOUS), Verona Italy /2023/.

Assoc. Prof. Dr Bozhkov MD PhD is familiar speak and written – French, English and Russian languages.

## CONCLUSION

The dissertation **„Postcholecystectomy syndrome- an update of an "old" problem. Diagnostic and advanced therapeutic strategy.“** is its own work on a modern topic with a clearly formulated aim, objectives, precise results and practical contributions. The dissertation meets the requirements of LDASRB, the regulations for its application and the rules of Medical University - Varna.

I vote POSITIVE and recommend the members of the scientific jury to give their positive vote.

05.12.2023

Sofia

Reviewer

Prof. Dr Atanas Ionkov MD, PhD

