

Henry Ford Health System Henry Ford Health System Scholarly Commons

Clinical Research

Medical Education Research Forum 2019

5-2019

Does Time of Day Matter for Acute Cholecystectomy in an Acute Care Surgery Model?

Ilya Rakitin

Henry Ford Health System, IRAKITI1@hfhs.org

Nathan Schmoekel

Henry Ford Health System, NSCHMOE2@hfhs.org

Jerry Stassinopoulos

Henry Ford Health System, JSTASSI1@hfhs.org

Nadia Obeid

Henry Ford Health System, nobeid1@hfhs.org

Cletus Stanton

Henry Ford Health System, CSTANTO1@hfhs.org

See next page for additional authors

Follow this and additional works at: <https://scholarlycommons.henryford.com/merf2019clinres>

Recommended Citation

Rakitin, Ilya; Schmoekel, Nathan; Stassinopoulos, Jerry; Obeid, Nadia; Stanton, Cletus; Dix, Michael; Ziegler, Nathan; and Johnson, Jeffrey, "Does Time of Day Matter for Acute Cholecystectomy in an Acute Care Surgery Model?" (2019). *Clinical Research*. 39. <https://scholarlycommons.henryford.com/merf2019clinres/39>

This Poster is brought to you for free and open access by the Medical Education Research Forum 2019 at Henry Ford Health System Scholarly Commons. It has been accepted for inclusion in Clinical Research by an authorized administrator of Henry Ford Health System Scholarly Commons. For more information, please contact acabrer4@hfhs.org.

Authors

Ilya Rakitin, Nathan Schmoekel, Jerry Stassinopoulos, Nadia Obeid, Cletus Stanton, Michael Dix, Nathan Ziegler, and Jeffrey Johnson

Does Time of Day Matter for Acute Cholecystectomy in an Acute Care Surgery Model?

Ilya Rakitin MD, Cletus Stanton MD, Michael R. Dix BA,
Nathan R. Ziegler BA, Jerry Stassinopoulos MD, MBA, Nadia Obeid MD,
Jeffrey Johnson MD, Nathan Schmoekel DO.

Henry Ford Health System, Detroit, Michigan



all for you

Introduction

- Prompt cholecystectomy for acute cholecystitis is well accepted; however, whether this warrants urgent nocturnal surgery remains a matter of debate.
- Differences in available resources, multitasking, and sleep hygiene may affect performance, which could impact conversion rates to open surgery, length of operation, hospital length of stay, and complications such as bile duct injury, blood loss, and major organ injury.
- Some evidence supports improved outcomes in patients who can avoid after-hour cholecystectomy.
- **Objective:** We aimed to determine if outcomes changed based on time of day for laparoscopic cholecystectomy. Our null hypothesis was that nighttime cholecystectomy is associated with worse outcomes



all for you

Methods

- Retrospective analysis of 486 patients aged ≥ 18 years who underwent cholecystectomy in a large, urban level 1 tertiary care center with a longstanding acute care surgery model.
- Demographics, procedural information, time of day of surgery, and postoperative outcomes were collected and stratified over a 4-year period from 2013-2017.
- Sixty five percent of the patients were female with an average age of 49.6 years and an average BMI of 32.7kg/m².
- A total of 230 (47%) patients underwent laparoscopic cholecystectomy for acute cholecystitis.
- Almost half (45%) underwent nighttime operation defined as procedure start time between the hours of 19:00 to 07:00.



all for you

Data

Demographics			Acute Cholecystitis Subgroup		Acute Cholecystitis 7p-7a Subgroup			
N	486		Patients	230	45.9%	Patients	103	45%
Avg Age	49.66		Conversion to Open	32	13.9%	Conversion to Open	14	6.1%
<u>Race</u>	<u>N</u>	<u>%</u>	Bile Leak	8	3.5%	Bile Leak	2	0.9%
Male	169	34.8%	Retained Stone	2	0.9%	Retained Stone	0	0.0%
Female	317	65.2%	SSI	1	0.4%	SSI	0	0.0%
White	206	42.4%	30 Day Readmission	17	7.4%	30 Day Readmission	6	2.6%
Black	184	37.9%	Post-op ERCP	11	4.8%	Post-op ERCP	4	1.7%
Hispanic	32	6.6%	MI	1	0.4%	MI	1	0.4%
Asian	8	1.6%	Renal Failure	6	2.6%	Renal Failure	5	2.2%
Native American	2	0.4%	Pneumonia	0	0.0%	Pneumonia	0	0.0%
Other/Declined	53	10.9%	Stroke	0	0.0%	Stroke	0	0.0%
Patient Factors			PE	2	0.9%	PE	1	0.4%
Avg BMI	32.76		LOS	Days	3.86	LOS	Days	3.43
			Blood Transfusion	1	0.4%	Blood Transfusion	2	0.9%



all for you

Results

- Analysis of the 230 patients with acute cholecystitis revealed an overall conversion rate to open of 14% (n=32), bile leak (duct of Luschka or cystic) 3.5% (n=8), 30-day readmission rate of 7.4% (n=17), and length of stay of 3.9 days.
- Subgroup analysis of patients having nighttime cholecystectomy for cholecystitis revealed 6.1% (N=103) conversion to open, 0.9% (n=2) bile leak, 2.6% (n=6) 30-day readmission rate, and 3.43 days length of stay.
- Other outcomes including mortality, cardiac events, pneumonia, stroke, PE, blood loss requiring blood transfusion were not statistically significant.
- One patient had a common bile duct injury in the daytime group that required conversion to open and hepaticojejunostomy.

Conclusions

- Despite prior evidence that favors delaying cholecystectomy until daytime to avoid complications, our study did not support this.
- We found no difference in outcomes between daytime and nighttime cholecystectomy and conclude that cholecystectomy can safely be performed during any time of the day with similar complication rates.
- This may reflect the volume of experience in after-hours acute care surgery at this regional referral center.



all for you

Limitations

- Single center study
- Non-randomized, retrospective review
- Sample size of only 230



all for you

References

- Govindarajan, et al. Outcomes of Daytime Procedures Performed by Attending surgeons after Night Work. NEJM, 2017
- Gutt, et al. Early versus Delayed Cholecystectomy, A Multicenter Randomized Trial. Ann Surgery 2013. Sept
- Phatak, et al. Is Nighttime the Right Time? Risk of Complications after Laparoscopic Cholecystectomy at Night. ACS, 2014
- Tsushimi, et al. Early Laparoscopic Cholecystectomy for Acute Gangrenous Cholecystitis. Surgical Laparoscopy, Endoscopy, and perc techniques
- Vinden, et al. Complications of Daytime Elective Laparoscopic Cholecystectomies Performed by surgeons Who operated the Night Before. JAMA, 2013
- Wu, et al. Can it Wait until Morning? A comparison of nighttime versus daytime cholecystectomy for acute cholecystitis. AJS, 2014



all for you