### GIT Complications after Open Heart Surgery: A Systematic Review and Meta-Analysis of Observational Study

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#### **Keywords**

GIT complications, open heart surgery, paralytic ileus.

#### **Abstract**

**Background**: There was not observational studies have reported correlations between GIT Complications after Open heart surgery. This meta-analysis was performed to investigate whether there is a correlation between GIT complications and Open-heart surgery.

**Methods**: Literature searches were performed in PubMed, Google, and the Cochrane Library from period August, 15, 2022 to October, 20, 2022. Studies that investigated the correlations between any GIT complications and Open-heart surgery were included. The pooled Odds ratio (ROs) with 95% confidence interval (CI) for GIT complications after open heart surgery was calculated by using RevMan 5.4.5.

**Results**: The eleven RCTs comprising 215,615 patients were included. Mainly types of GIT complications after open heart surgery in the studies were Isolated GIT Bleeding, Hiatus hernia, Jaundice, Dysphagia and paralytic ileus. ORs was 0.00(0.00-0.00); but the most significant GIT Complications after open heart surgery was Hiatus hernia ORs was (1.23 0.78, 1.95). the second significant GIT complications were Jaundice ORs was 0.05 (0.03-0.08) and Dysphagia ORs was 0.15 (0.08-0.25).

Conclusions: Correlation between GIT Complications and Open-heart surgery.

#### 1.Introduction

The incidence of GIT Complication after open heart surgery is uncommon; but its serious. Currently, increasing numbers of observation studies have investigated the correlation between GIT Complications and open-heart surgery that given the prevalence GIT Complications after open heart surgery; its important to determine whether correlations exist between GIT Complications and open-heart surgery.

#### 2.Methodology

#### Search strategy and eligibility criteria

The PubMed, Google, Cochrane Library were searched from August 1, 2022 until September 24, 2022, for studies that assessed the relationship between GIT Complications after open heart surgery.

The following medical subject heading (Mesh) term and Keywords were used: "GIT

Complications", "after open heart surgery", "Paralytic ileus". The search was restricted to studies on humans and to those that were published in the English Language. The title and abstracts were screened by one author independently. The inclusion criteria were as follow: any study with and without GIT Complications after open heart surgery.

The exclusion criteria were as follow: Any complications, not GIT Complications after open heart surgery.

#### Data extraction

The following data were extracted: first author, year of publication, study design, Number of subjects, Types of Complications, Type of Surgery. As well as whether in hospital. Deaths were excluded in the survival analysis.

#### Statistical analysis

Statistical analysis was performed with RevMan (version 5.4.5; Cochrane collaborations) ORs and their 95% Confidence Interval (Cis) were used to evaluate the association between GIT complications after open heart surgery. Statistical heterogeneities among studies were assessed by the I'2' statistic. The random effects model and the fixed effects model were used.

The assessment of publication bias was evaluated using the funnel plot. We followed both the preferred Reporting items for systematic Reviews and Meta-analysis of observation studies. All analyses were based on previously published studies; thus, no ethical approval and patient consent are not required.

#### 3.Result

Literature searches and description of studies. The flow diagram of the literature searches is shown in Fig6. The entire study sample size from included studies was 215,615 patients. The characteristics of the included studies are shown in Table1. The quality of the included studies was analyzed.

Records Identified
through database
searching (n= 45)
Records after duplicates removed
(n=0)
Records screened (n=45)
Full-text articles assessed for
eligibility (Included=11), (Excluded
34)
Studies included in qualitative
synthesis (n=11)
Studies included in qualitative
synthesis (n=11)
Meta-analysis)(
F1: Flow chart of articles
identified, included and excluded
studies.
states.

The Studies on GIT post open heart surgery complications: eleven studies were included in the

analysis of correlation between any reported post open heart surgery complications.

The pooled ORs(95%CI) of GIT post open heart surgery complications was 0.00(0.00-0.00) non-significant Fig 5. The sensitivity analysis demonstrated that no individual study significantly influenced the overall effect of ORs. Studies bias was examined by Revman program Fig 6.

Mainly types of GIT complications after open heart surgery in the studies were Isolated GIT Bleeding Fig4, Hiatus hernia Fig1, JaundiceFig2, Dysphagia Fig3.

But the most significant common GIT type complications after Open heart surgery was; Hiatus hernia Fig1.

#### 4.Discussion

The present study undertook a comprehensive review and meta-analysis of the literatures to assess the relationship between GIT complications and Open-heart surgery. The results demonstrated that, although the correlation was not significant by several studies, the pooled results showed that GIT complications after open heart surgery correlated with nonsignificant. There was not any study talked before about GIT Complications after open heart surgery, so we decided to meta-analysis study to determine the most significant GIT complications after open heart surgery. In the analysis of the relationship between GIT complications and openheart surgery, the studies demonstrated low heterogeneity. The present study had some limitations the sample size may not be adequate to detect the significant correlation and a limited number of studies were included.

#### 5. Conclusion

In summary, there is good evidence to support the correlations between GIT complications and Openheart surgery, to reduce and determine the negative impact of most common and serious GIT complication after open heart surgery.

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#### Acknowledgements

Not applicable

#### Availability of data and materials

All data generated or analyzed during this study are included in the published articles which were listed in Table 1.

#### Ethics approval and consent to participate

All analyses were based on previous published studies; thus, no ethical approval and patient consent are required.

#### **Consent for publication**

Not applicable.

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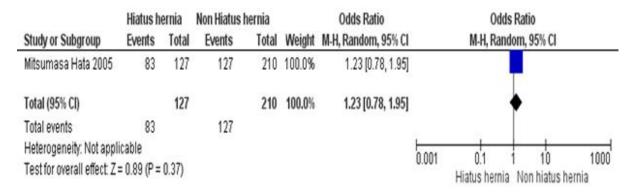


Fig1

	Jaund	lice	Non jau	ndice		Odds Ratio	Odds	Ratio	
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% CI	M-H, Fixe	ed, 95% CI	
LOCKEY 1967	38	232	194	232	1.6%	0.04 [0.02, 0.06]			
Mina Farag 2019	1272	12556	11228	12556	98.4%	0.01 [0.01, 0.01]			
Total (95% CI)		12788		12788	100.0%	0.01 [0.01, 0.01]	•		
Total events	1310		11422						
Heterogeneity: Chi <sup>2</sup> =	17.28, df	= 1 (P <	0.0001);	l² = 94%			0.001 0.1	1 10	1000
Test for overall effect	Z=104.8	9 (P < 0	.00001)					Non jaundice	1000

Fig2

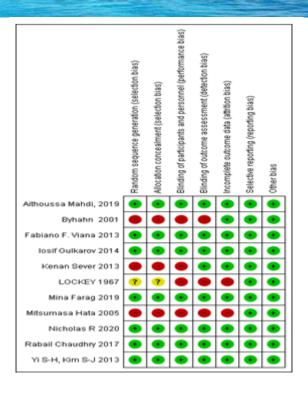
	Dyspha	agia	Non Dysp	hagia		Odds Ratio		Odds	Ratio	
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI		M-H, Rand	om, 95% CI	
Yi S-H, Kim S-J 2013	35	111	111	146	100.0%	0.15 [0.08, 0.25]				
Total (95% CI)		111		146	100.0%	0.15 [0.08, 0.25]		•		
Total events	35		111							
Heterogeneity: Not app	olicable						0.002	0.1	1 10	500
Test for overall effect: 2	Z = 6.85 (P	< 0.00	1001)				0.002		Non Dysphagia	

Fig3

	GIT blee	eding	Non GIT ble	eeding		Odds Ratio		Odds	Ratio	
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% CI		M-H, Fixe	d, 95% CI	
Aithoussa Mahdi 2019	20	1077	1057	1077	5.7%	0.00 [0.00, 0.00]	4			
Byhahn 2001	7	1116	1109	1116	6.1%	0.00 [0.00, 0.00]	4			
Fabiano F. Viana, 2013	61	5382	5321	5382	29.0%	0.00 [0.00, 0.00]	•			
losif Gulkarov 2014	6	565	551	565	3.0%	0.00 [0.00, 0.00]	4			
Nicholas R. 2020	48	10285	10242	10285	56.2%	0.00 [0.00, 0.00]	•			
Total (95% CI)		18425		18425	100.0%	0.00 [0.00, 0.00]	•			
Total events	142		18280							
Heterogeneity: Chi2 = 81	.77, df = 4	(P < 0.0	0001); I <sup>2</sup> = 9	5%			0.001	0.1	10	1000
Test for overall effect: Z =	79.22 (P	< 0.000	01)				0.001		Non GIT bleedi	

Fig4





Risk of bias summary: fig 6

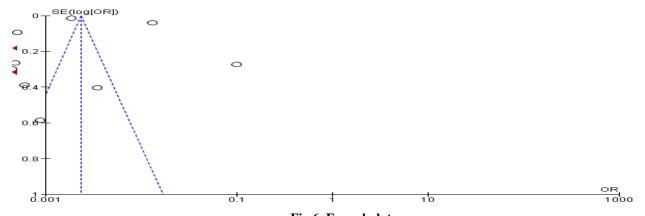


Fig 6. Funnel plot

Fig5. Forest plot

	GIT Compli	GIT Complications Non GIT Comp			Odds Ratio Odds Ratio				•			
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% CI		M-H, Fixe	d, 95% CI			
Aithoussa Mahdi 2019	20	1077	1057	1077	0.5%	0.00 [0.00, 0.00]	4					
Byhahn 2001	23	1116	1093	1116	0.5%	0.00 [0.00, 0.00]	•					
Fabiano F. Viana,2013	61	5382	5321	5382	2.7%	0.00 [0.00, 0.00]	•					
losif Gulkarov 2014	13	565	551	565	0.3%	0.00 [0.00, 0.00]	+					
Kenan Sever 2013	29	1360	1331	1360	0.7%	0.00 [0.00, 0.00]	•					
LOCKEY 1967	13	232	219	232	0.1%	0.00 [0.00, 0.01]		-				
Mina Farag 2019	1272	12566	11228	12566	5.1%	0.01 [0.01, 0.01]		•				
Mitsumasa Hata 2005	6	210	204	210	0.1%	0.00 [0.00, 0.00]	←					
Nicholas R. 2020	246	10285	10079	10285	5.0%	0.00 [0.00, 0.00]	4					
Rabail Chaudhry 2017	7624	182688	175064	182688	85.0%	0.00 [0.00, 0.00]						
Yi S-H, Kim S-J 2013	35	146	111	146	0.0%	0.10 [0.06, 0.17]		<del></del>				
Total (95% CI)		215627		215627	100.0%	0.00 [0.00, 0.00]						
Total events	9342		206258									
Heterogeneity: Chi <sup>2</sup> = 27	62.20, df = 10	) (P < 0.00	001); I² = 100%				0.004			4000		
Test for overall effect: Z=	: 394.67 (P <	0.00001)					0.001	0.1 1 GIT Complications	10 Non GIT Compl	1000		
								On Complications	Mon On Compi	icalions		

#### Table 1:

Study ID											
	Country	Registration number	Study Design	Characters of patients	Length of Study arm:	ns	Numbers	Age, mean(SD)	Gender	GIT complication after open heart surger	y Comorbidities
				1360 adult patients underwent open heart surgery with cardiopulmonary bypass							
				at our institution. Operative procedures included coronary artery bypass grafting (CABG), isolated valve surgery, com bined CABG and valve surgery, aortic root						Paralytic ileus /Upper gastrointestinal	Diabetes mellitus/ Hypertension/ Peripheral arterial disease/
Kenan Sever 2013	New York	DOI: 10.1177/0003319713482357	Cohort study	replacement, surgi cal excision of intracardiac tumors, and surgical correction of adult congenital heart defects.	3 years single arm		1360 patients	Age (mean + SD) 68.2 + 5.6	Gender (MF) 6/2	bleeding /Lower gastrointestinal bleeding /Acute mesenteric ischemia	Cerebrovascular accident/ Chronic renal failure
					-,						
										Epigastric pain /Upper GI bleeding	Diabetes /Hypertension/Renal
										Epigastric pain /Upper GI bleeding /Hiatus hernia /Esophagitis /Supeficial gastritis /Erosive gastritis /Hemorrhagic gastritis /Active ulcer /Gastric cancer	insufficiency/Smoking/ CABG/ Valve surgery / Aortic surgery /
Misumasa Hata 200	05 Japan	_	RCT	210 patients, 157 males and 53 fe males (average age 64.5±9.3 years, range: 26	3 3 groups		70 patients to every group.	Age 65.0±7.0/ 62.6±10.0 / 66.1±9.0	Sex (MF) 19/7 . 50/18 .55/19		CPB duration.
										Hepatic fallure/Ischemic or necrotic bowel disease 5 /Gastric bleeding 7	Hypertension
							No GIT complications (n 1093)		Male 775 (70.9%) 15 (65.2%)	/Pseudomembranous colitis 3 /Acute cholecystitis 2 /Septic rupture of the	
Byhahn 2001	Germany	DOI: 10.1007/s00268-001-0095-3	Cohort study	A total of 1116 patients who had undergone cardiosurgical pro-cedures with extra	cone year Two groups	s /	/GIT complications (n 23)	Age (years) 66.1 8.12 / 64.6 9.71	Female 318 (29.1%) 8 (34.8%)	spleen 1	History of myocardial infarction
				The mean + SD age, gestational age, and birth weight of the infants were $3.4\pm3.0$ mos, $38.6+1.8$ wks, and $3.0+0.5$ kg, re spectively. The body weight and							Neurologic/ Malformation syndrome/ Previous open beart
				the height at					Male 19 / 59		surgery/ Preoperative cardiac failure/ Preoperative ventilator care/
Yi S-H, Kim S-J 201	3 Korea	DOI: 10.1097/PHM.0b013e31828763/4	cross sectional study ( retrospective	operation were 5.4 ± 1.9 kg and 59.3 ±11.6 cm, respectively.	_ Two groups	s I	Infants with Dysphagia (n = 35) / In	nf: Age at operation, mos 2.9 (2.7) / 3.5 (3.1	Female 16 / 52	Dysphagia	Preoperative nonoral feeding.
											Hypertension / Hypercholesterolemia/ Myocardial
										Diverticulitis (n = 1) /Ischemic bowel (n =	infarction/ CAD/ Diabetes/ CVA/ COPD/ CRI / Cardiac angioplastic
losif Gulkarov 2014	New York, USA	doi: 10.5761/atcs.oa.13.02245	cross sectional study ( retrospective	The records of 565 consecutive adult patients who underwent mitral valve surger	ry 30 days No Gl comp	plication/ GIT Complication i	n = 552 / n = 13	65 ± 14 / 68 ± 12	Male	3)/Isolated GI bleed (n = 6) /GI bleed + acute cholecystitis (n = 3)	/ Atrial fibrillation/ Vasopressor use/ Cardiogenic shock
LOCKEY (1967)	London			Two hundred and thirty-two patients who had open heart operations at the National Heart Hospital have been studied.	Two groups			Age : congenital heart lesion 3-56 (20) aq			congenital heart lesions and acquired Mainly acrtic /Mainly mitral /Multiple valve
LOCKEY (1967)	London	nttp://thorax.bmj.com/	RCI	National Heart Hospital have been studied.	I wo groups	s .	maie group 1447 temaie group 88	Age: congental heart lesion 3-56 (20) aq	redMale and temale	Jaundice	Smoking Diabetes melitus
											Hypertension
											Chronic obstructive pulmonary Renal insufficiency
											Renal insufficiency Cerebro-vascular disease Perinheral vascular disease
											History of peptic ulcer disease
											and/or gastritis CCS angine Class III-IV
				Patients with and without GIB were similar when compared for age, smoking, vascular disease, left ventricular function,			f 1077 patients undergoing cardiopulmonary bypass(CPB)			A total of 1077 adult patients who underwent CPB were	Pulmonary arterial hypertension
Althoussa Mahdi 201	19 Morocco	10.4103/0976-5042.147501	retrospectively	Canadian Cardiovascular Society angina class, functional class New York Heart Association (NYHA) III-IV	30 days Two groups		from 1994 to 2012	Age (years): Control group: 50.18±13.5	Sex: Male/female 718/355 18	included in this study. GIB occurred in /2 1.83% (20/1077).	Prior cardiac surgery Atrial fibrillation
											Smoking history Diabetes melitus
											Hypercholesterolemia Hypertension
										The incidence of GI complications was	Hypertension Stroke Peripheral vascular diseases
										The incidence of GI complications was 1.1% (61 out of 5382 patients) with an overall 30-day mortality of 33%	Obese
										(versus 3% in the non-Gl complication group). The	Chronic lung disease Infective endocarditis
										most common complications were GI bleeding, gastroenteritis and bowel	Immunosuppression Myocardial infarction
										ischaemia. Patients who had GI complications were	Heart failure Shock
										significantly older. In the patients with GI	Arrhythmia
			We performed a retrospective review of a prospectively collected	<b>,</b>				Age Control group: 68		bleeding (n = 21), 13 had upper GI bleeding, five lower GI bleeding and three	Inotrope use Anticoagulation Steroid
Fabiano F. Viana,20	13 Australia	doi: 10.1111/ans.12134	database	We analysed a prospectively collected database containing all adult cardiac surg	e Two groups	s :	5382 patients			bleeding, live lower Groleeding and three	
							•	Age Contact group: 66	ObSex (male): Control group: 46	combined upper and lower Gl bleeding.	Pulmonary hypertension
								Age Control group, as	ObSex (male): Control group: 46	combined upper and lower Gl bleeding.	Pulmonary hypertension Diabetes melitus History of smoking
								Age: Comitor group, as	ObSex (male): Control group: 46	combined upper and lower GI bleeding.	Pulmonary hypertension Diabetes mellitus History of smoking Arterial hypertension
								Age Could group so	Ob Sex (male): Control group: 46	combined upper and lower Gl bleeding.	Pulmonary hypertension Diabetes melitus History of smoking Arterial hypertension Artal fibrillation PAD
								Age Curio grop to	Ob Sex (male): Control group: 46	backing, we have of backing and a re- combined upper and lower Gibleeding.	Pulmonary hypertension Diabetes melitus History of somoking Arterial hypertension Aerial fibrillation PAD COPD Previous MI
								nga cumu gup. ss	ObSex (male): Control group: 46	combined upper and lower O'bleeding.	Pulmonary hypertension Diabetes mellitus History of smoking Arterial hypertension Artial fibrillation PAD COPD Previous MI Previous PCI Unstable angina
								Age County (supplied	ObSex (male): Control group: 46	inaction of the control of the contr	Pulmonary hypertension Diabetes mellins History of smoking Anterial hypertension Arrial fibrillation PAD COPD Provious M Previous PCI Unstable angina Renal impairment History of heastic disease
				Only patients with the need for CPB installation,who were at least 18 years of				Age County Out to	ObSex (male): Control group: 46	isociality in virtues of stores of theeding and the combined upper and fower of theeding.	Pulmonary hypertension Diabetes mellins History of smoking Anterial hypertension Anterial hypertension Anterial hypertension COPD Previous M Previous M Previous PCI Unstable angina Remail impairment Enreal impairment difease Preoperative dalaysis Obesity
				Only pallers with the need for CPB installation, who were at least 18 years of ages at the time of the proce dure, were included. Operations were performed				according to	ObSex (male): Control group: 46	combined upper and lower Gilbbending.	Pulmonary hyportension Diabetes mellinus History of smoking Asterior of smoking PAO COPP Previous MI Previous MI History of hepatic disease Prooperative diabysis Emergency procedure
Mna Farag 2019	Germany	DOI: 10.1002/e/e2-12447	rstrossectively	Only parties with the road for CPB installation who were at least 15 years of age at the time of the pools dure, were included. Operations were performed with the use of crystallated or blood, similary assembly explain the control of the control	one oroup		122	72. Acer (veser) 65.50±12.8	Ob.Sex (male): Control group: 46	combined upon and leave of bleeding.  355 (27.9%) of patients developing post-operation.	Pulmonary hypertension Diabetes mellitus Hatory of smoking Anterior of smoking Anterior of smoking COPD Previous M Previo
Mina Farag 2019	Germany	DOI: 10.1002/eh/2.12447	retrospectively	age at the time of the proce dure, were included. Operations were performed with the use of crystalloid or blood, antegrade cardioplegia, and on pump beating heart	one group		127			combined upper and lower Glibheading.  365 (27 9%) of patients developing post- operative	Pulmonary hypertension Diabetes mellitus Hatory of smoking Anterior of smoking Anterior of smoking COPD Previous M Previo
Mna Farag 2019	Germany	DOI: 10.1002/eHz.12447	netrospectively	age at the time of the proce dure, were included. Operations were performed with the use of crystalloid or blood, antegrade cardioplegia, and on pump beating heart	_ one group		127			combined upper and lower Glibheading.  365 (27 9%) of patients developing post- operative	Pulmonary hypotheration Diabetes mellins Hestory of smoking Ancheal hypotheration Ancheal hypotheration PAD Provious M Provious M Hestory of hypotheration Renal impairment Hestory of hypotheration Proposition of the hypotheration Provious Action Provious Action Provious Action Provious Action Provious Action Provious acradiac surgery Acuse CHF Provious cardiac surgery Provious cardiac surgery Acuse CHF Provious cardiac surgery Acuse CHF Provious cardiac surgery Acuse CHF Provious acradiac surgery Acuse CHF Provious acradiac surgery Acuse CHF Provious Acuse C
Mna Farag 2019	Germany	DOI: 10.1002/en/2.12447	retrospectively	age at the time of the proce dure, were included. Operations were performed with the use of crystalloid or blood, antegrade cardioplegia, and on pump beating heart procedures.	one group		127			combined upper and lower Glibheading.  365 (27 9%) of patients developing post- operative	Pulmorary hypothesion Diabetes residue in Control of the Control o
Mna Farag 2019	Germany	DOI: 10.1002/eHZ-12447	netrospectively	age at the time of the proce dure, were included. Operations were performed with the  work of the process of th	_ ane group		127			combined upper and lower GI bleeding.  355 (27.9%) of patients developing post-operative hyperbilindrinaemia were female.	Pulmorary hypothesion Dubbets melhar but be been been been been been been been
Mna Farag 2019	Germany	DOI: 10.1002/eHZ-12447	retrospectively	aga at the time of the proce dure, were included. Operations were performed with the under the procedure of the procedure of the procedure.  Patient age, gender, race, admission type (elective versus emergent) were examined. Other accompaning diagnoses codes for accompaning diagnoses.	one group		127			combrind upper and lower GI bleading.  355 (27 %) of patients developing post- operative hypotodischrasemia were female.  The most common GI complication in	Pulmorary hypertersion Conditions mediate Conditions mediate Anterial hypertersion Anterial hypertersion Anterial hypertersion Anterial hypertersion Personal Rel Unstable angina Recal impairment Anterial impairment Anterial impairment Anterial impairment Anterial impairment Anterial impairment Procession Condition Disease Anterial Condition Disease Anterial Impairment Hypertersion Hyp
Mna Farag 2019	Germany	DOI: 10.1002/e9/2.12447	retrospectively	age at the time of the proce dure, were included. Operations were performed use of orystatistic or blood, antegrade cardioplegis, and on pump beating head procedures.  Patient age, gender, races, admission type (describe versus emergent) were examined. Charter seems assessed for using ICD-0 disagnosis codes for disbetter, (EGD).  hyperchinological (EGD).	one group		127	72 Age (years) 65:30 ± 12.8	Femula 355 (27.5)	combrind upper and lower GI bleading.  355 (27 %) of patients developing post- operative hypotodischrasemia were female.  The most common GI complication in	Pulmorary hypertersion Conditions mediate Conditions mediate Anterial hypertersion Anterial hypertersion Anterial hypertersion Anterial hypertersion Personal Rel Unstable angina Recal impairment Anterial impairment Anterial impairment Anterial impairment Anterial impairment Anterial impairment Procession Condition Disease Anterial Condition Disease Anterial Impairment Hypertersion Hyp
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				aga at the time of the proce dure, were included. Operations were performed with the control of				72 Age (years) 65.36 ± 12.8  Age: 18.40  GGT Complications group: 486 (641) Non GGT Complications group: 12022 (633) 1004  1005 1004 1007 1006 1007 1007 1007 1007 1007 1007	Female 366 (27.8)  Male GIT complications group: 567 (73.72)  Nen GIT complements Test (74.91)  Female 1987 (28.28)  56744 (22.1)	combined upper and lower GI bleading.  355 (27 9%) of patients developing post- operative hypothetic developing post- operative hypothetic developing post- loping and post- population was post operative flows.  The most common GI complication in the orine curduc and vascular population was post operative flows.  The most common GI complication in the orine curduc and vascular population was post operative flows.  The beautiful post operation shall posters but in face-ending order of Deservation (2-3%), exact Chiclopically, Moscontens but when the complication in Collecturation (2-3%), exact Chiclopically.	Pulmorary hypertersion Diabetes residue of the Control of the Cont
Mna Farag 2019  Rabal Chaudhry 20		DOI: 10.1002/eh/2.12447  DOI: 10.1002/eh/2.12447		age at the time of the proce dure, were included. Operations were performed use of orystatiod or blood, antegrade cardioplegis, and on pump beating head procedures.  Patient age, gender, races, administro type (describe versus emergent) were existent. Operating the process were assessed for using LDD of dayposis codes for dailystes (CSD). hyperchicalsetedenia (272), perpheral vescular diseases (CSD), chronic lang diseases (400, 2, 40, 40, 707), infective endocardios (273), chronic lang diseases (400, 2, 40, 40, 707), infective endocardios (173), chronic lang diseases (400, 2, 40, 40, 707), infective endocardios (173), chronic lang diseases (400, 2, 40, 40, 707), infective endocardios (173), chronic lang diseases (400, 2, 40, 40, 707), infective endocardios (173), chronic lang diseases (400, 2, 40, 40, 707), infective endocardios (173), chronic lang (173), chronic tended (173), day, chronic tended (1	оче угоць		127	72 Age (years) 65.36 ± 12.8  Age: 18.40  GGT Complications group: 486 (641) Non GGT Complications group: 12022 (633) 1004  1005 1004 1007 1006 1007 1007 1007 1007 1007 1007	Female 355 (27.5)  Make GPT complications group: 557 (73.72) Non-GPT (73.74)  Female 375 (73.74)  ADD 175 (73.74)	combined upper and lower GI bleading.  355 (27 Ph.) of patients developing post- operative in the combined of the complete in  Proposition of the combined of the combined of the  Proposition of the combined of the  Proposition of the Complete Inc.  The most common GI complete Inc.  The	Pulmorary hypertersion Dialector residue in Carlos Intelligent Carlos
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				age at the time of the proce dure, were included. Operations were performed were of orystational to thood, artisignate cardiopless, and on pump beating heart procedures.  Patient age, gender, race, admission type (elective versus emergent) were examined. Other accompanying disposes were assessed for using ICD-9 diagnoses codes for hypothesises were assessed for using ICD-9 diagnoses codes for hypothesises (44.30, deathy light procedures). The performance (45.30, deathy light procedures) and the performance (45.30, deathy light procedures) and the performance (45.30, deathy light procedures). As the performance (45.30, deathy light procedures) are set of the performance (45.30, deathy light procedures). The performance (45.30, deathy light procedures) are performed to the performance (45.30, deathy light procedures). The performance of the performance (45.30, deathy light procedures) are performed to the performance (45.30, deathy light procedures). The performance of				72 Age (years) 65.36 ± 12.8  Age: 18.40  GGT Complications group: 486 (641) Non GGT Complications group: 12022 (633) 1004  1005 1004 1007 1006 1007 1007 1007 1007 1007 1007	Female 366 (27.8)  Male GIT complications group: 567 (73.72)  Nen GIT complements Test (74.91)  Female 1987 (28.28)  56744 (22.1)	and the common of the completation in the centre control of the completation in the centre ce	Pulmorary hypertension Diabetes and Pulmorary hypertension Diabetes mediate and the Company of t
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