



COLECISTITIS AGUDA: evidencia actual en criterios diagnósticos, de severidad y terapéutica 2013



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Acute cholecystitis

Definition

Acute cholecystitis is an acute inflammatory disease of the gallbladder. It is often attributable to gallstones, but many factors, such as ischemia; motility disorders; direct chemical injury; infections with microorganisms, protozoa, and parasites; collagen disease; and allergic reaction are involved.

Incidence

Acute cholecystitis cases account for 3%–10% of all patients with abdominal pain.^{38–40} The percentage of acute cholecystitis cases in patients under 50 years old with abdominal pain ($n = 6317$) was low, at 6.3%, whereas that in patients aged 50 and over ($n = 2406$) was high, at 20.9% (average, 10%)⁴⁰ (Table 5).

J Hepatobiliary Pancreat Surg (2007) 14:15–26
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Introducción

Etiología

- 90-95 % Litiásica
- 5-10 % Alitiásica

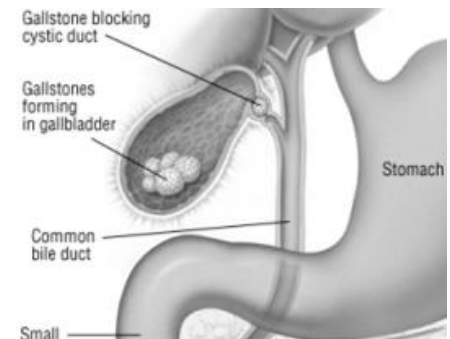
Definitions, pathophysiology, and epidemiology of acute cholangitis and cholecystitis: Tokyo Guidelines

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Introducción

- La colecistitis aguda constituye una complicación común de la litiasis vesicular y es frecuentemente encontrada en la práctica quirúrgica
- Hasta el año 2007, no hubo criterios diagnósticos o criterios de valoración de severidad

Strasberg SM. Acute calculous cholecystitis. N Engl J Med 2008; 358: 2804-11.



Introducción

- En el año 2006, en Japón, se llevó a cabo una reunión de consenso internacional, donde participaron expertos de distintos lugares del mundo, quienes realizaron una Revisión Sistemática sobre el tema
- Se desarrolló una guía de consenso, conocida como **TOKYO GUIDELINE 2007 (TG07)**

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Diagnostic criteria and severity assessment of acute cholecystitis: Tokyo Guidelines

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Introducción

- Para actualizar las TG07, se organizó un Comité de Revisión de las Guías Tokio, quienes revisaron las TG07, evaluaron nuevas evidencias y condujeron un análisis multicéntrico
- Se desarrollaron las nuevas guías conocida como:

TOKYO GUIDELINE 2013 (TG13)

J Hepatobiliary Pancreat Sci (2012) 19:578–585
DOI 10.1007/s00534-012-0548-0

ORIGINAL ARTICLE

New diagnostic criteria and severity assessment of acute cholecystitis in revised Tokyo guidelines

Masamichi Yokoe · Tadahiro Takada · Steven M. Strasberg · Joseph S. Solomkin · Toshihiko Mayumi · Harumi Gomi · Henry A. Pitt · Dirk J. Gouma · O. James Garden · Markus W. Büchler · Seiki Kiriya · Yasutoshi Kimura · Toshio Tsuyuguchi · Takao Itoi · Masahiro Yoshida · Fumihiko Miura · Yuichi Yamashita · Kohji Okamoto · Toshifumi Gabata · Jiro Hata · Ryota Higuchi · John A. Windsor · Philippus C. Bornman · Sheung-Tat Fan · Harijt Singh · Eduardo de Santibanes · Shinya Kusachi · Atsuhiko Murata · Xiao-Ping Chen · Palepu Jagannath · SungGyu Lee · Robert Padbury · Miin-Fu Chen



Introducción

Factores determinantes de la decisiones médicas





Introducción

Importancia del CONSENSO (Sistematizar)

- Reducción de la variabilidad de la atención
- Respaldo en la toma de decisiones
- Reducción de costos
- Protección legal
- Mejoras en la calidad de atención
- Permite investigar y comunicar en forma uniforme

New diagnostic criteria and severity assessment of acute cholecystitis in revised Tokyo guidelines

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Criterios de diagnóstico

Criterios diagnóstico colecistitis aguda TG13

A. Local signs of inflammation, etc.:

(1) Murphy's sign, (2) RUQ mass/pain/tenderness

B. Systemic signs of inflammation, etc.:

(1) Fever, (2) elevated CRP, (3) elevated WBC

C. Imaging findings:

Imaging findings characteristic of acute cholecystitis

Suspected diagnosis: One item in A + one item in B

Definite diagnosis: One item in A + one item in B + one item in C

Acute hepatitis, other acute abdominal diseases, and pancreatitis should be excluded

RUQ right upper quadrant, CRP C-reactive protein, WBC white blood cell

Ultrasonography findings (level 4)²⁻⁵

Sonographic Murphy sign (tenderness elicited by pressing the gallbladder with the ultrasound probe)

Thickened gallbladder wall (>4mm; if the patient does not have chronic liver disease and/or ascites or right heart failure)

Ultrasonography findings (level 4)²⁻⁵

Sonographic Murphy sign (tenderness elicited by pressing the gallbladder with the ultrasound probe)

Thickened gallbladder wall (>4mm; if the patient does not have chronic liver disease and/or ascites or right heart failure)

Enlarged gallbladder (long axis diameter >8cm, short axis diameter >4cm)

Incarcerated gallstone, debris echo, pericholecystic fluid collection

Sonolucent layer in the gallbladder wall, striated intramural lucencies, and Doppler signals.

Enlarged gallbladder

Linear high-density areas in the pericholecystic fat tissue.

Tc-HIDA scans (level 4)^{11,12}

Non-visualized gallbladder with normal uptake and excretion of radioactivity

Rim sign (augmentation of radioactivity around the gallbladder fossa).

Criterios de diagnóstico

A. Local signs of inflammation, etc.:

(1) Murphy's sign, (2) RUQ mass/pain/tenderness

B. Systemic signs of inflammation, etc.:

(1) Fever, (2) elevated CRP, (3) elevated WBC count

C. Imaging findings:

Suspected diagnosis: One item in A + one item in B

Definite diagnosis: One item in A + one item in B + C



Criterios de severidad

Variables predictores de mal pronóstico

J Hepatobiliary Pancreat Sci (2012) 19:578–585

Table 5 Prognostic factors in acute cholecystitis

Prognostic factor	Positive value
Leukocytosis	$\geq 15,000/\text{mm}^3$ $>14,900/\text{mm}^3$ $>13,000/\text{mm}^3$ $15,885/\text{mm}^3$ vs. $9,948/\text{mm}^3$
ALP	
Age	>26 years old >45 years old >60 years old
Diabetes mellitus	
Male	
Heart rate	>90 bpm
Gallbladder wall thickness >4.5 mm	
Pericholecystic fluids	
CBD dilatation	
Admission delay	

ALP alkaline phosphatase, CBD common bile duct



Criterios de severidad

Criterios de valoración de severidad de la colecistitis aguda TG13

“Grade III” (severe) acute

- 1. Cardiovascular dysfunction
- 2. Neurological dysfunction
- 3. Respiratory dysfunction
- 4. Renal dysfunction
- 5. Hepatic dysfunction
- 6. Hematological dysfunction

“Grade II” (moderate) acute

- 1. Elevated WBC count
- 2. Palpable tender mass
- 3. Duration of complaint > 48 hours
- 4. Marked local inflammation (cholecystitis)

“Grade I” (mild) acute

acute cholecystitis in a patient with no comorbidities, safe and low-risk operation

WBC white blood cell

Table 10 Distribution of severity grading of acute cholecystitis with TG07 and TG13

Severity assessment	Asai et al. [30] (TG07)	Lee et al. [14] (TG07)	Present study (TG13)
Severe (Grade III)			12 (5.3 %)
Moderate (Grade II)			104 (45.8 %)
Mild (Grade I)			111 (48.9 %)
Total			227

Experiencia durante la colecistectomía laparoscópica

Colecistitis aguda Leve o Grado I

“Mild (grade I)” acute cholecystitis does not meet the criteria of “severe (grade III)” or “moderate (grade II)” acute cholecystitis. Grade I can also be defined as acute cholecystitis in a healthy patient with no organ dysfunction and only mild inflammatory changes in the gallbladder, making cholecystectomy a safe and low-risk operative procedure.

Hallazgos:

- ☐ Adema de la pared
- ☐ Tensión de la pared
- ☐ Adherencias laxas
- ☐ Líquido seroso libre



Bajo riesgo!



Experiencia durante la colecistectomía laparoscópica

Colecistitis aguda Moderada o Grado II

“Moderate” acute cholecystitis is accompanied by any one of the following conditions:

1. Elevated WBC count ($>18000/\text{mm}^3$)
2. Palpable tender mass in the right upper abdominal quadrant
3. Duration of complaints $>72\text{ h}^a$
4. Marked local inflammation (biliary peritonitis, pericholecystic abscess, hepatic abscess, gangrenous cholecystitis, emphysematous cholecystitis)

^aLaparoscopic surgery in acute cholecystitis should be performed within 96 h after the onset (level 2b-4)^{13,14,16}

Hallazgos:

- ☐ Adema de la pared
- ☐ Tensión de la pared
- ☐ Adherencias firmes
- ☐ Gangrena
- ☐ Absceso peri-vesicular
- ☐ Absceso hepático
- ☐ Peritonitis biliar
- ☐ Sangrado fácil

Riesgos locales!

- LQVB
- Lesión de otra víscera
- Conversión a cirugía abierta
- Complicaciones postoperatorias



Experiencia durante la colecistectomía laparoscópica

Colecistitis aguda Severa o Grado III

“Severe” acute cholecystitis is accompanied by dysfunctions in any one of the following organs/systems

1. Cardiovascular dysfunction (hypotension requiring treatment with dopamine $\geq 5 \mu\text{g/kg}$ per min, or any dose of dobutamine)
2. Neurological dysfunction (decreased level of consciousness)
3. Respiratory dysfunction ($\text{PaO}_2/\text{FiO}_2$ ratio < 300)
4. Renal dysfunction (oliguria, creatinine $> 2.0 \text{ mg/dl}$)
5. Hepatic dysfunction (PT-INR > 1.5)
6. Hematological dysfunction (platelet count $< 100,000/\text{mm}^3$)

Pacientes críticos



Quemados
Traumatizados
Oncológicos

Riesgos sistémicos!



Cardiológica
Respiratorias
Renales
DBT
IRC



Importancia de las TG13

El rol más importante de los criterios diagnósticos y la valoración de severidad, radica en permitir hacer un *diagnóstico temprano y proveer el tratamiento más apropiado* de acuerdo a la *severidad del cuadro*.

Colecistitis aguda:

1. Colecistectomía temprana o en un tiempo
(durante la primer semana)
2. Colecistectomía tardía o en dos tiempos
(8-12 semanas)

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Surgical treatment of patients with acute cholecystitis: Tokyo Guidelines

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and VIBUL SACHAKUL²⁰

Enfoque de tratamiento antes de las TG07

Colecistectomía abierta (antes de la década del `90)

- Colecistectomía abierta temprana o en un tiempo (durante la primer semana)

Papi 2004

Papi C, Catarci M, Ambrosio D, Gili L, Koch M, Grassi GB, et al. Timing of cholecystectomy for acute calculous cholecystitis: a meta-analysis. *American Journal of Gastroenterology* 2004;99(1): 147-55.

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Enfoque de tratamiento antes de las TG07

Colecistectomía laparoscópica (década del `90)

- Colecistectomía laparoscópica tardía o en dos tiempos (8-12 semanas)

Mayor tasa de complicaciones intra o postoperatorias

Cuschieri 1991

Cuschieri A, Dubois F, Mouiel J, Mouret P, Becker H, Buess G, et al. The European experience with laparoscopic cholecystectomy. *American Journal of Surgery* 1991;161(3):385-7.

Wilson 1991

Wilson P, Leese T, Morgan WP, Kelly JF, Brigg JK. Elective laparoscopic cholecystectomy for 'all-comers'. *Lancet* 1991;338(8770):795-7.

Kum 1996

Kum CK, Eypasch E, Lefering R, Paul A, Neugebauer E, Troidl H. Laparoscopic cholecystectomy for acute cholecystitis: is it really safe?. *World Journal of Surgery* 1996;20(1):43-8.



Enfoque de tratamiento antes de las TG07

Colecistectomía laparoscópica (década del `90)

- Colecistectomía laparoscópica tardía o en dos tiempos (8-12 semanas)
 - Mayor tasa de complicaciones intra o postoperatorias
 - Mayor tasa de conversión

Cheema 2003

Cheema S, Brannigan AE, Johnson S, Delaney PV, Grace PA. Timing of laparoscopic cholecystectomy in acute cholecystitis. *Irish Journal of Medical Science* 2003;172(3):128–31.

Livingston 2004

Livingston EH, Rege RV. A nationwide study of conversion from laparoscopic to open cholecystectomy. *American Journal of Surgery* 2004;188(3):205–11.



Enfoque de tratamiento antes de las TG07

Colecistectomía laparoscópica (década del `90)

Colecistectomía laparoscópica tardía o en dos tiempos (8-12 semanas)

- Mayor tasa de complicaciones intra o postoperatorias
- Mayor tasa de conversión
- Mayor tasa de LQVB

Nuzzo 2005

Nuzzo G, Giuliani F, Giovannini I, Ardito F, D'Acapito F, Vellone M, et al. Bile duct injury during laparoscopic cholecystectomy: results of an Italian national survey on 56 591 cholecystectomies. *Archives of Surgery* 2005;140(10):986-92.

Richardson 1996

Richardson MC, Bell G, Fullarton GM. Incidence and nature of bile duct injuries following laparoscopic cholecystectomy: an audit of 5913 cases. *British Journal of Surgery* 1996;83(10):1356-60.



Enfoque de tratamiento antes de las TG07

Colecistectomía laparoscópica (después de la década del `90)

Early versus delayed laparoscopic cholecystectomy for acute cholecystitis (Review)

Gurusamy KS, Samraj K

- Colecistectomía laparoscópica temprana o en un tiempo (dentro de la primer semana)



Enfoque de tratamiento antes de las TG07

Early versus delayed laparoscopic cholecystectomy for acute cholecystitis (Review)

Gurusamy KS, Samraj K

Objectives

The aim was to compare the early laparoscopic cholecystectomy (less than seven days of onset of symptoms) versus delayed laparoscopic cholecystectomy (more than six weeks after index admission) with regards to benefits and harms.

Early versus delayed laparoscopic cholecystectomy for acute cholecystitis (Review)

Gurusamy KS, Samraj K



Variables incluidas en la REVISIÓN:

- LQVB
- Conversión a cirugía abierta
- Bilirragia postoperatoria que requiera CPRE
- Colección abdominal que requiera drenaje
- Infección superficial
- Infección profunda
- Mortalidad

No hubo diferencias significativas!

Enfoque de tratamiento antes de las TG07

Table 2. Conversion and bile duct injury rates (Based on people who underwent surgery)

Study	Conversion-ELC	Conversion -DLC	Conversion-crossover	Bile duct injury-ELC	Bile duct injury-DLC
Davila 1999	1/27 (3.7%)	6/36 (16.7%)	4/5 (80%)	0/27 (0%)	1/36 (2.8%)
Johansson 2003	23/74 (31.1%)	20/69 (29%)	10/18 (55.5%)	0/74 (0%)	1/69 (1.4%)
Kolla 2004	5/20 (25%)	5/20 (25%)	Not applicable.	1/20 (5%)	0/20 (0%)
Lai 1998	11/53 (20.8%)	11/46 (23.9%)	2/8 (25%)	0/53 (0%)	0/46 (0%)
Lo 1998	5/48 (10.4%)	9/45 (20%)	2/9 (22.2%)	0/48 (0%)	1/45 (2.2%)
All studies	45/222 (20.3%)	51/216 (23.6%)	18/40 (45%)	1/222 (0.5%)	3/216 (1.4%)

ELC = early laparoscopic cholecystectomy

DLC = delayed laparoscopic cholecystectomy

Enfoque de tratamiento antes de las TG07

Early versus delayed laparoscopic cholecystectomy for acute cholecystitis (Review)

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Other outcome measures

We also recorded other outcome measures, which were not amenable to meta-analysis because of the heterogenous ways of reporting and also because only the delayed group was exposed to the risk.

- Colecistitis no resuelta o recurrente
- Tiempo operatorio y estadía hospitalaria
- Otra morbilidad relacionada a los cálculos (De 228 pac.: 2 colangitis y 0 pancreatitis)

Early versus delayed laparoscopic cholecystectomy for acute cholecystitis (Review)

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Enfoque de tratamiento antes de las TG07

Early versus delayed laparoscopic cholecystectomy for acute cholecystitis (Review)

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Table 6. Non-resolving or recurrent cholecystitis

Study	Delayed laparoscopic cholecystectomy	Emergency surgery in delayed group	Emergency surgery in delayed group (%)	Conversion to open cholecystectomy in the emergency surgery in delayed group
Davila 1999	36	5	13.9%	4
Johansson 2003	71	18	25%	10
Kolla 2004	20	0	0%	0
Lai 1998	51	8	15.7%	2
Lo 1998	50	9	18%	2
Total	228	40	17.5%	18 (45%)



Enfoque de tratamiento antes de las TG07

Early versus delayed laparoscopic cholecystectomy for acute cholecystitis (Review)

Gurusamy KS, Samraj K

Table 7. Operating time and hospital stay

Study	Early-operating time	Delay-operating time	Early -hospital stay	Delay-hospital stay
	Minutes (Median)	Minutes (Median)	Days (Median)	Days (Median)
Davila 1999	71	50	1.6	2.7
Johansson 2003	98	100	5	8
Kolla 2004	104 (Mean)	93 (Mean)	4.1 (Mean)	10.1 (Mean)
Lai 1998	122.8 (Mean)	106.6 (Mean)	7.6 (Mean)	11.6 (Mean)
Lo 1998	135	105	6	11



Enfoque de tratamiento antes de las TG07

Early versus delayed laparoscopic cholecystectomy for acute cholecystitis (Review)

AUTHORS' CONCLUSIONS

Implications for practice

1. Early laparoscopic cholecystectomy during acute cholecystitis appears to be safe and shortens the total hospital stay.
2. Common bile duct stone is an important issue and the management of acute cholecystitis may vary in the presence of common bile duct stones, depending upon the preference of the surgeon.

Enfoque de tratamiento antes de las TG07

Early versus delayed laparoscopic cholecystectomy for acute
cholecystitis (Review)

AUTHORS' CONCLUSIONS

Implications for practice

3. Early laparoscopic cholecystectomy should only be performed by surgeons with adequate laparoscopic experience and prior experience of operating during the acute cholecystitis. Establishment of units specializing in this type of surgery may be necessary to accomplish this.

Early versus delayed laparoscopic cholecystectomy for acute
cholecystitis (Review)

Gurusamy KS, Samraj K



Resultados a tener en cuenta!!

- Conversión **20-23%**
- LQVB: **0,5%** temprana y **1,4%** dos tiempos
- Persistencia o recurrencia de la colecistitis en la modalidad de tratamiento en dos tiempos: **17,5%**
- **45% conversión** en CVL por persistencia o recurrencia
- **0,87% colangitis y 0% de pancreatitis**, en la espera de la CVL en segundo tiempo

Early versus delayed laparoscopic cholecystectomy for acute cholecystitis (Review)

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Enfoque actual de tratamiento desde las TG07

- La indicación de tratamiento, tendrá lugar de acuerdo a la valoración de severidad de la colecistitis aguda según las TG07

TOKYO GUIDELINE 2007 (TG07)

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Enfoque actual de tratamiento desde las TG07

Q3. What is the optimal surgical treatment for acute cholecystitis according to grade of severity?

Mild (grade I) acute cholecystitis: early laparoscopic cholecystectomy is the preferred procedure.

Moderate (grade II) acute cholecystitis: early cholecystectomy is performed. However, if patients have severe local inflammation, early gallbladder drainage (percutaneous or surgical) is indicated. Because early cholecystectomy may be difficult, medical treatment and delayed cholecystectomy are necessary.

Severe (grade III) acute cholecystitis: urgent management of organ dysfunction and management of severe local inflammation by gallbladder drainage and/or cholecystectomy should be carried out. Delayed elective cholecystectomy should be performed later, when cholecystectomy is indicated.

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Enfoque actual de tratamiento desde las TG07

Cuál es el tratamiento quirúrgico óptimo para la colecistitis aguda, acorde a la valoración de severidad?

LEVE / GRADO I: la colecistectomía laparoscópica

temprana, es el procedimiento preferido

Colecistitis aguda Leve o Grado I

“Mild (grade I)” acute cholecystitis does not meet the criteria of “severe (grade III)” or “moderate (grade II)” acute cholecystitis. Grade I can also be defined as acute cholecystitis in a healthy patient with no organ dysfunction and only mild inflammatory changes in the gallbladder, making cholecystectomy a safe and low-risk operative procedure.

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Surgical treatment of patients with acute cholecystitis: Tokyo Guidelines

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Enfoque actual de tratamiento desde las TG07

Cuál es el tratamiento quirúrgico óptimo para la colecistitis aguda, acorde a la valoración de severidad?

Colecistitis aguda Moderada o Grado II MODERADA - GRADO II: la colecistectomía laparoscópica temprana, es llevada a cabo.

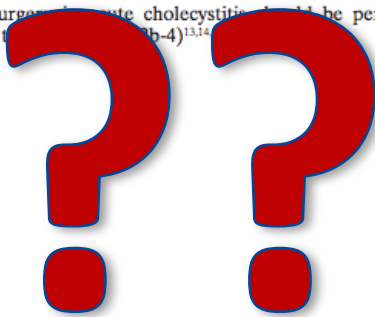
Sin embargo, si el paciente presenta inflamación local severa, el drenaje temprano de la vesícula es indicado (percutáneo o quirúrgico).

Debido a que la colecistectomía temprana puede ser dificultosa, el tratamiento médico y colecistectomía tardía son necesarias

"Moderate" acute cholecystitis is accompanied by any one of the following conditions:

1. Elevated WBC count ($>18,000/\text{mm}^3$)
2. Palpable tender mass in the right upper abdominal quadrant
3. Duration of complaints $>72\text{ h}^a$
4. Marked local inflammation (biliary peritonitis, pericholecystic abscess, hepatic abscess, gangrenous cholecystitis, emphysematous cholecystitis)

^aLaparoscopic surgery for acute cholecystitis should be performed within 96 h after onset (15b-4)^{13,14}



Enfoque actual de tratamiento desde las TG07

Cuál es el tratamiento quirúrgico óptimo para la colecistitis aguda, acorde a la valoración de severidad?

SEVERA - GRADO III: el manejo urgente de la disfunción de órgano y de la inflamación local severa a través del drenaje de la vesícula o la colecistectomía, se deben llevar a cabo.

La colecistectomía tardía debe ser realizada más tarde cuando esté indicada.

Colecistitis aguda Severa o Grado III

“Severe” acute cholecystitis is accompanied by dysfunctions in any one of the following organs/systems

1. Cardiovascular dysfunction (hypotension requiring treatment with dopamine $\geq 5\mu\text{g/kg}$ per min, or any dose of dobutamine)
2. Neurological dysfunction (decreased level of consciousness)
3. Respiratory dysfunction ($\text{PaO}_2/\text{FiO}_2$ ratio <300)
4. Renal dysfunction (oliguria, creatinine $>2.0\text{mg/dl}$)
5. Hepatic dysfunction (PT-INR >1.5)
6. Hematological dysfunction (platelet count $<100\,000/\text{mm}^3$)

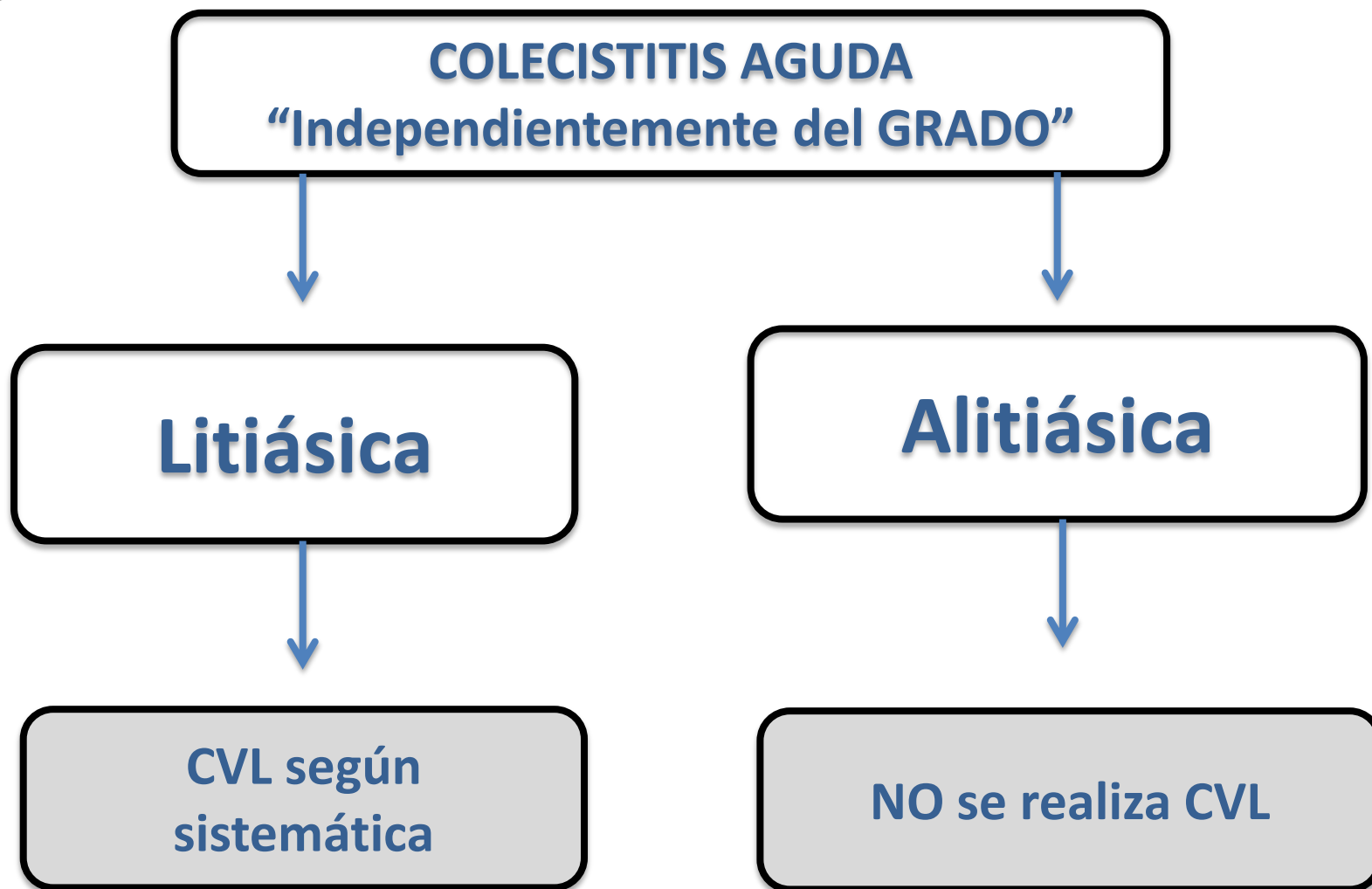


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NUESTRA CONDUCTA





LEVE - GRADO I

NUESTRA CONDUCTA

Bajo Riesgo

Alto Riesgo

Tto. Médico

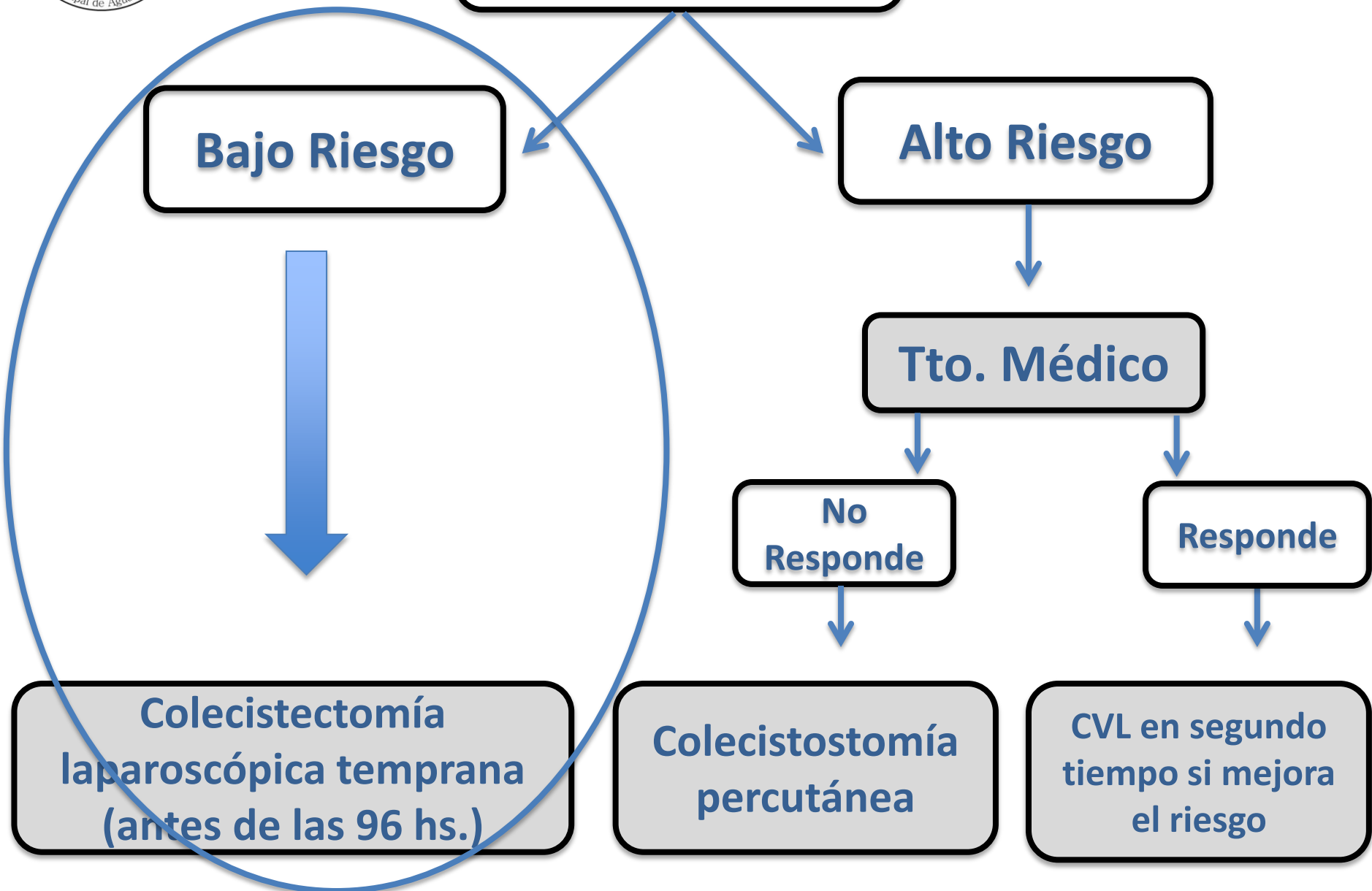
**No
Responde**

Responde

**Colecistectomía
laparoscópica temprana
(antes de las 96 hs.)**

**Colecistostomía
percutánea**

**CVL en segundo
tiempo si mejora
el riesgo**





SEVERA - GRADO III

NUESTRA CONDUCTA

Colecistostomía Percutánea

**Mejora su condición general
antes de la semana**

**NO mejora su condición
general antes de la semana**

CVL Temprana

**CVL en segundo tiempo si
mejora su condición**



LEVE - GRADO I



Bajo Riesgo



**Colecistectomía
laparoscópica temprana
(antes de las 96 hs.)**

NUESTRA CONDUCTA

SEVERA - GRADO III



Colecistostomía Percutánea



**NO mejora su condición
general antes de la semana**



**CVL en segundo tiempo si
mejora su condición**



MODERADA - GRADO II

NUESTRA CONDUCTA

CON Inflamación local marcada

Bajo Riesgo

**Exploración
laparoscópica**

**Hilio
seguro**

CVL

Alto Riesgo

**Colecistostomía
percutánea**

**Hilio no
seguro**

**Colecistostomía
percutánea
translaparoscópica**

SIN inflamación local marcada

Alto Riesgo

Tto Médico

Responde

**CVL segundo
tiempo
si mejora el riesgo**

**No
Responde**

**Colecistostomía
percutánea**

Bajo Riesgo

3-5 días

CVL

> 5 días

Protocolo



COLECISTITIS AGUDA: evidencia actual en criterios diagnósticos, de severidad y terapéutica 2013



“Muchas Gracias”

**Servicio de Cirugía General
Hospital Municipal de Agudos “Dr. Leónidas Lucero”
Bahía Blanca**