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Dynamic Practice Guidelines for Emergency General Surgery

Committee on Acute Care Surgery, Canadian Association of General Surgeons

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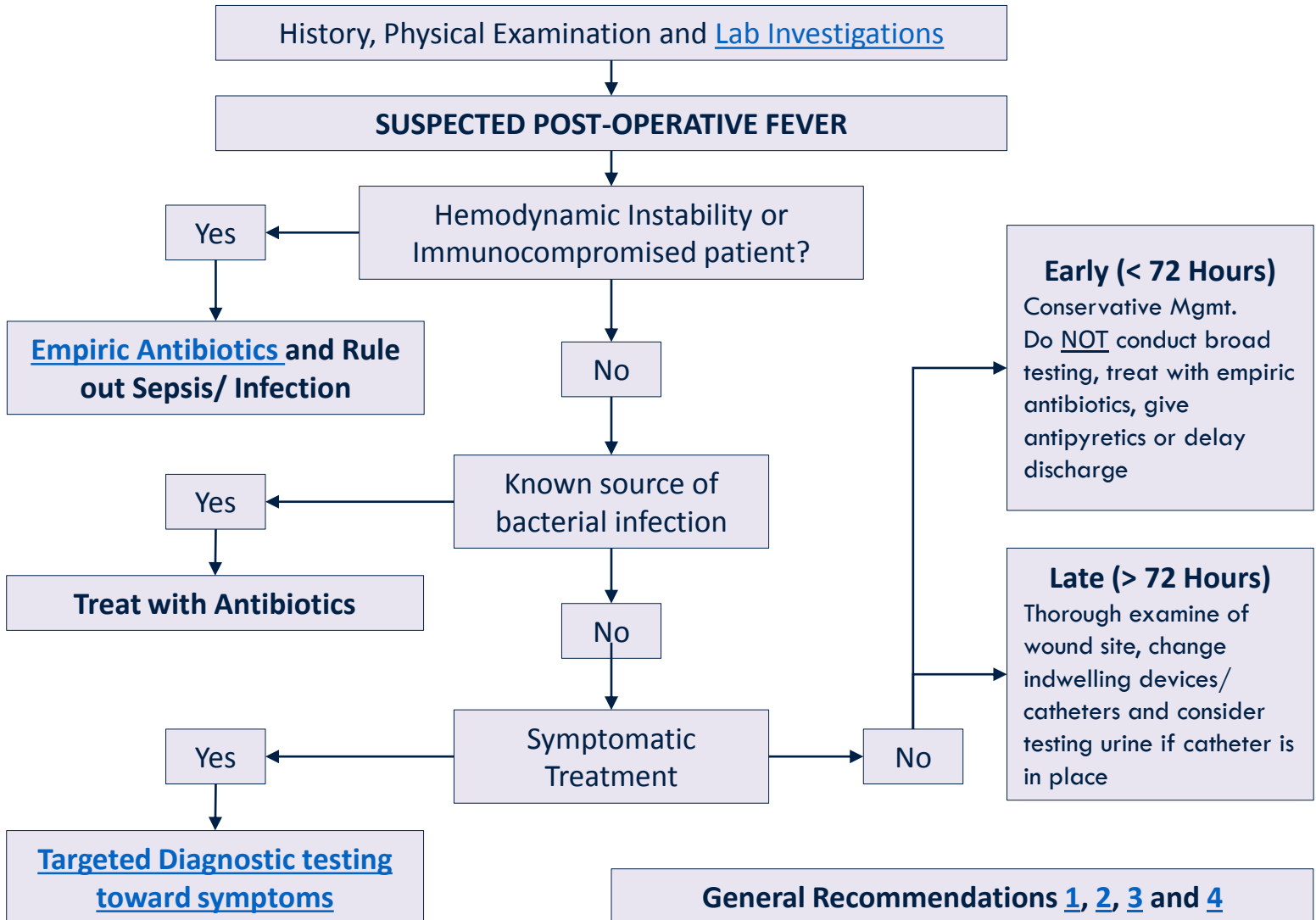
POST-OPERATIVE FEVER

Dynamic Practice Guidelines for Emergency General Surgery

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POST-OPERATIVE FEVER



Definition:

- Temperature greater than 38.0°C at any point during the perioperative period
- Can be split into early ≤ 72 hours and late > 72 hours

Early (< 72 hours)

- Non-infectious in >80% of patients
- Not due to atelectasis
- Likely an inflammatory response secondary to surgery

Late (> 72 hours)

- By post-operative day 5, if a fever is present, more likely to find an identifiable infectious cause (50-90%)
- Most common: Wound infection (42%), Urinary tract infection (29%), and Pneumonia (12%)

POST-OPERATIVE FEVER

Return to CPG

Epidemiology:

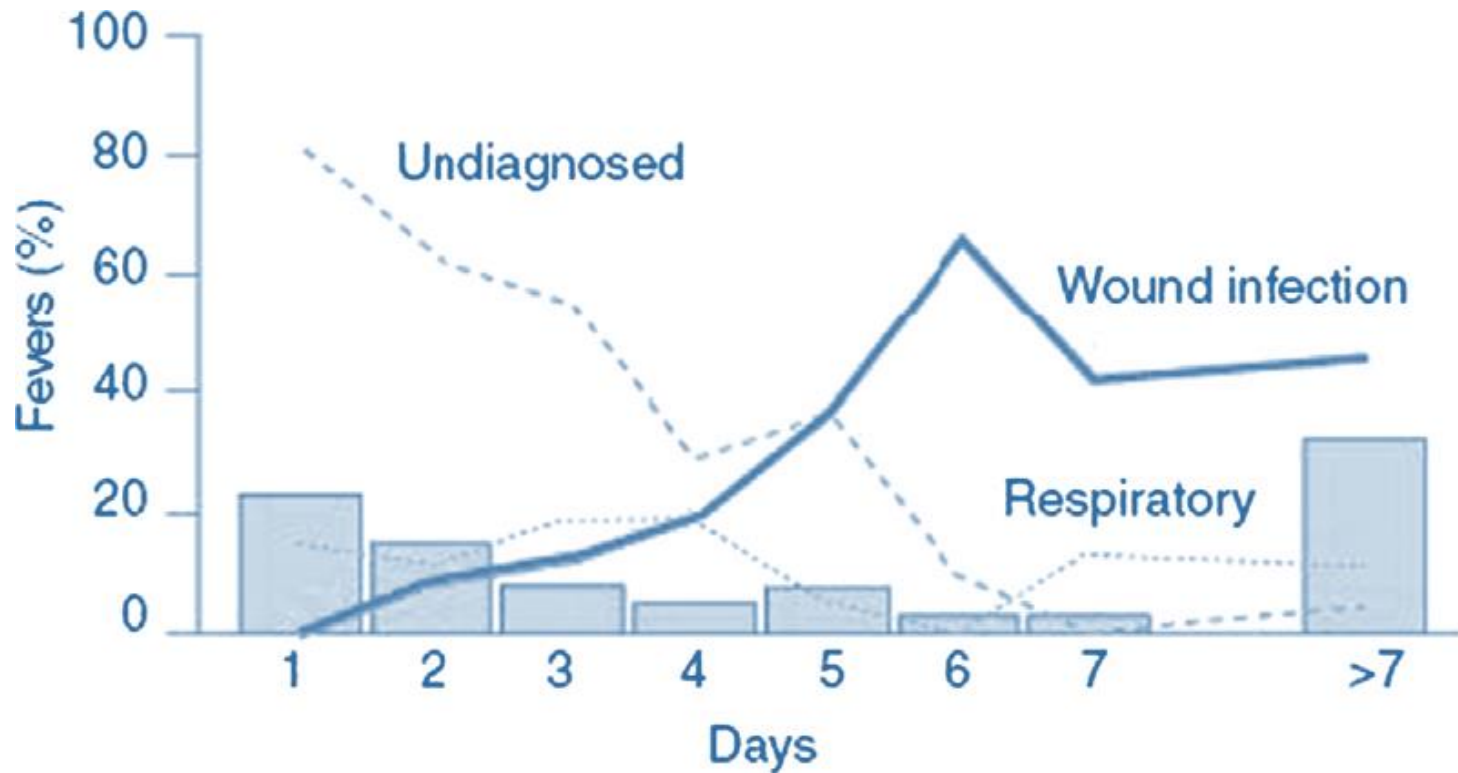


Image from: Narayan and Medinilla, 2013 [Emerg Med Clin North Am](#)

Important Study on Fever Work-up:

Early Postoperative Fever and the “Routine” Fever Work-Up: Results of a Prospective Study

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- Fevers within 72 hours
 - 23.7% of patients had post-operative fever
 - Fever work-up on 9.7% of total patients
 - Blood cultures, urine cultures and chest x-rays all had positive yields less than 10%
 - 82% of patients with post-op fever within 3 days had no clear cause

Important Study on Fever Work-up:

Positive Test	Freischlag et al.	de la Torre et al.	Schey et al.	Lesperance et al.
WBC	44%	26%	NR	NR
Urinalysis	NR	15%	17%	NR
Urine Culture	10%	14%	19%	9%
Sputum Culture	9%	24%	NR	NR
Blood Culture	5%	7%	10%	0%
Chest X-Ray	2%	14%	14%	6%

- Fever and readmission
 - 300 consecutive patients with fever
 - 15% had fever within 24 hours of discharge
 - Readmission rate: 15.6% in febrile and 12.2% in afebrile group

Investigations for Infectious Sources

- Urine
 - Consider as source if urinary symptoms, catheter in-situ
 - Obtain initial Urinalysis; if results indicate possible infection then send Urine for culture and sensitivity
 - Respiratory
 - Consider if increase/change in sputum, respiratory symptoms, increased oxygen requirements
 - Obtain Chest X-ray
 - Blood
 - Consider if patient systemically unwell, presence of central venous catheters, rigors
 - Draw peripheral C&S from 2 sites or 1 peripheral site and central venous catheter if present
 - Wound
 - Inspect all wounds for signs of infection
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Treatment – Antipyretics/ Cooling

- Randomized data from 3 trials of 320 critically ill patients
 - 2 trials were surgical patients and 1 was sepsis
 - No differences between treatment and non-treatment arms in mortality or length of stay
- Newer trial with 700 from NEJM in patient with fever and known or suspected infection found no benefit of IV acetaminophen use

Treatment – Empiric Antibiotics

- Should be saved for high-risk/unstable patients
- Consider for hemodynamic instability, neutropenic/ immunocompromised or an established source of infection
- Use best practices for antibiotic use
 - Early use, readily available, broad-spectrum
 - Resource: www.bugsanddrugs.org
- Inappropriate empiric antibiotic choice associated with higher 30-day and in-hospital mortality¹

¹Marquet et al, 2015 [Critical Care](#)

Recommendations: Work-Up

- Due to the low yield, isolated post-operative fever in a patient with no clear source should not be empirically worked up with chest radiography, urinalysis or blood cultures in the early period (Grade B)
 - In the late period, fever is more likely to be infectious and a physical exam and history should be performed for the most common infectious sites (Grade B)
 - If indicated, work-up for post-operative fever should be in narrow in focus and based on the symptomatology of the patient
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Recommendations: Antibiotic Treatment

- Patients with isolated fever should be treated conservatively and not routinely given empiric antibiotics (Grade C)
 - Empiric antibiotics can be considered in the following patient groups:
 - Immunocompromised/neutropenic (Grade A)
 - Hemodynamically unstable without an obvious noninfectious cause (Grade B)
 - Established bacterial source (Grade B)
 - Febrile patients without an obvious source should have any invasive lines changed (Grade D)
 - Antibiotic choice should follow best practices and be appropriate for the likely organism (Grade A)
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Recommendations: Antipyretic Use

- No evidence for use of antipyretics treatment in critically ill patients (Grade A).
 - Antipyretics should not be used routinely to treat fever in postoperative patients.
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Recommendations: Discharge Management

- Patients with isolated fever should not be kept in hospital for observation (Grade C).
 - Isolated fever had no impact on rates of readmission.
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