HOSPITALIST NEWSFLASH

Emily Signor, MD

Assistant Professor, University of Utah

American College of Physicians

Utah Meeting

DISCLOSURES

- I have no financial disclosures.
- This is not comprehensive.
- Some of these studies may change your practice. Please read the evidence accordingly.
- We will be using Poll Everywhere.

AREAS COVERED TODAY

- Inpatient HTN management
- Hospital At Home

General IM

- OVIVA
- Coronavirus
- Baloxivir

Infectious Disease

- D-Dimer Threshold

Thrombosis

- CAP Guidelines
- EVALI

Pulmonology

- Anakinra

Rheumatology

MOC QUESTION

Mr. B, a 75 year old veteran, is admitted to your service for community acquired pneumonia. He has a past medical history of gout, hypertension, and Type 2 Diabetes Mellitus. His home medications include Lisinopril 20 mg daily and amlodipine 5 mg daily. He has had normal renal function during the admission. He is euvolemic.

As he is approaching discharge to home, you notice that the patient has had multiple systolic blood pressure readings >160. Based on what you know about post-discharge outcomes, what medication changes, if any, should be made?

A. Increase Lisinopril to 40 mg daily

B. Increase Amlodipine to 10 mg daily

C. Add HCTZ 25 mg daily.

D. Make no changes and defer to PCP

JAMA Internal Medicine | Original Investigation

Clinical Outcomes After Intensifying Antihypertensive Medication Regimens Among Older Adults at Hospital Discharge

Timothy S. Anderson, MD, MAS, MA; Bocheng Jing, MS; Andrew Auerbach, MD; Charlie M. Wray, DO, MS; Sei Lee, MD; W. John Boscardin, PhD; Kathy Fung, MS; Sarah Ngo, MLIS; Molly Silvestrini, BA; Michael A. Steinman, MD

Question: Is there a correlation between titration of antihypertensives during an inpatient and clinical outcomes after discharge?

Study Design: Retrospective cohort study in VA system from January 1, 2009, to December 31, 2015. Patients who had intensification of HTN regimen at discharge were compared to those that didn't. Statistical analysis used propensity score matching.

Inclusion Criteria: Patients 65 or older with a known history of hypertension admitted for pneumonia, UTI, VTE and discharged to community setting.

Exclusion Criteria: Patients with Afib, CVA, ACS were excluded.

PRIMARY OUTCOMES

All cause readmission within 30 days

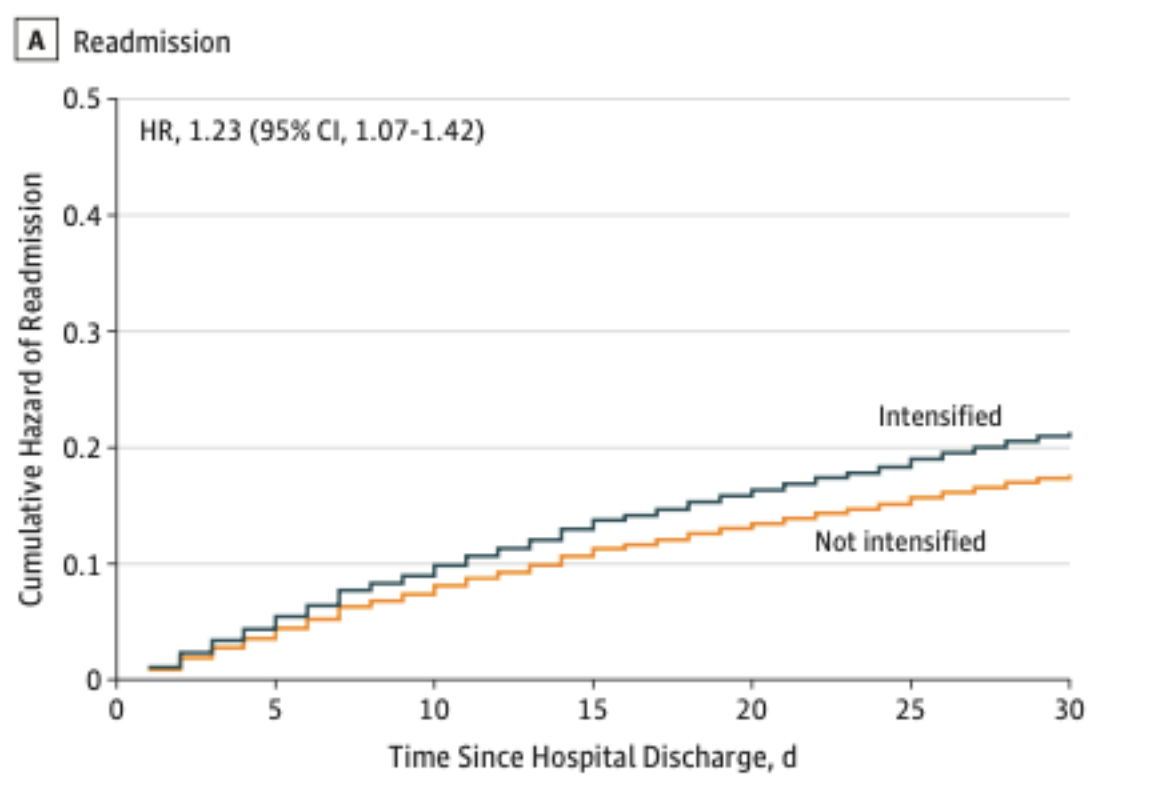
Medication related serious adverse event

Cardiovascular event within one year

PRIMARY OUTCOMES

All cause readmission within 30 days

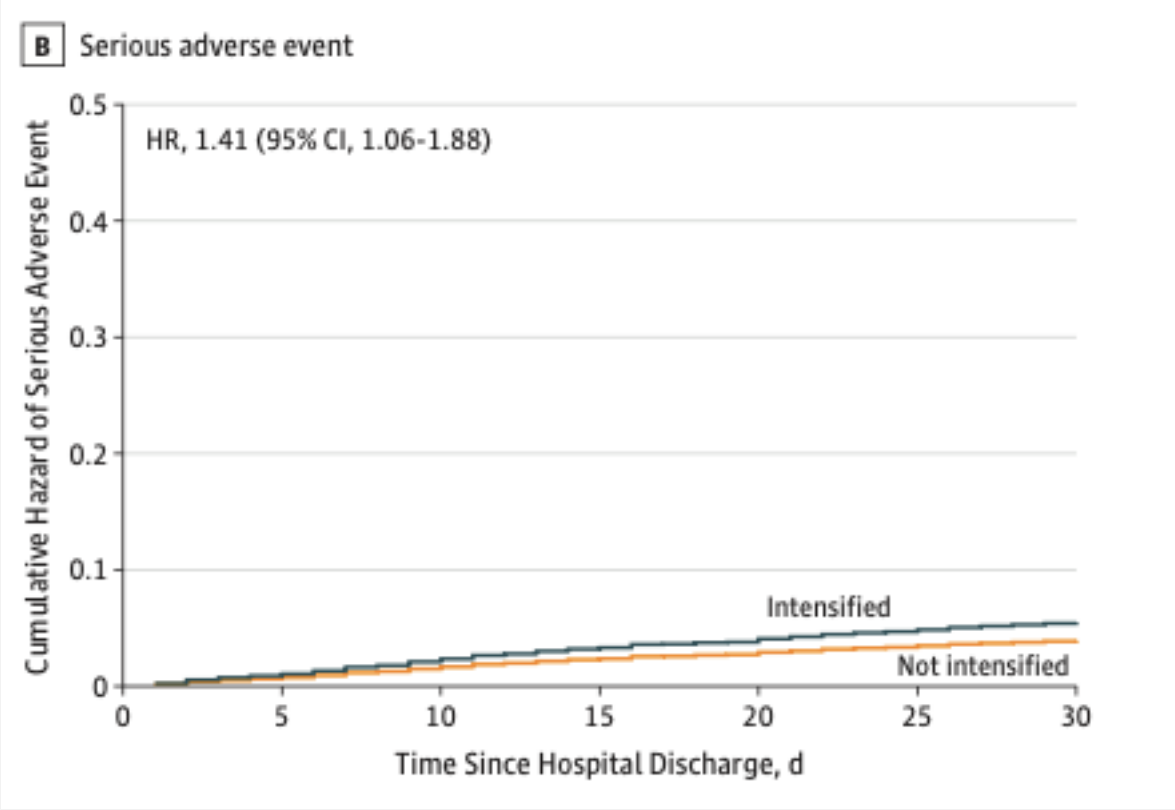
SIGNIFICANT



PRIMARY OUTCOMES

Medication related serious adverse event

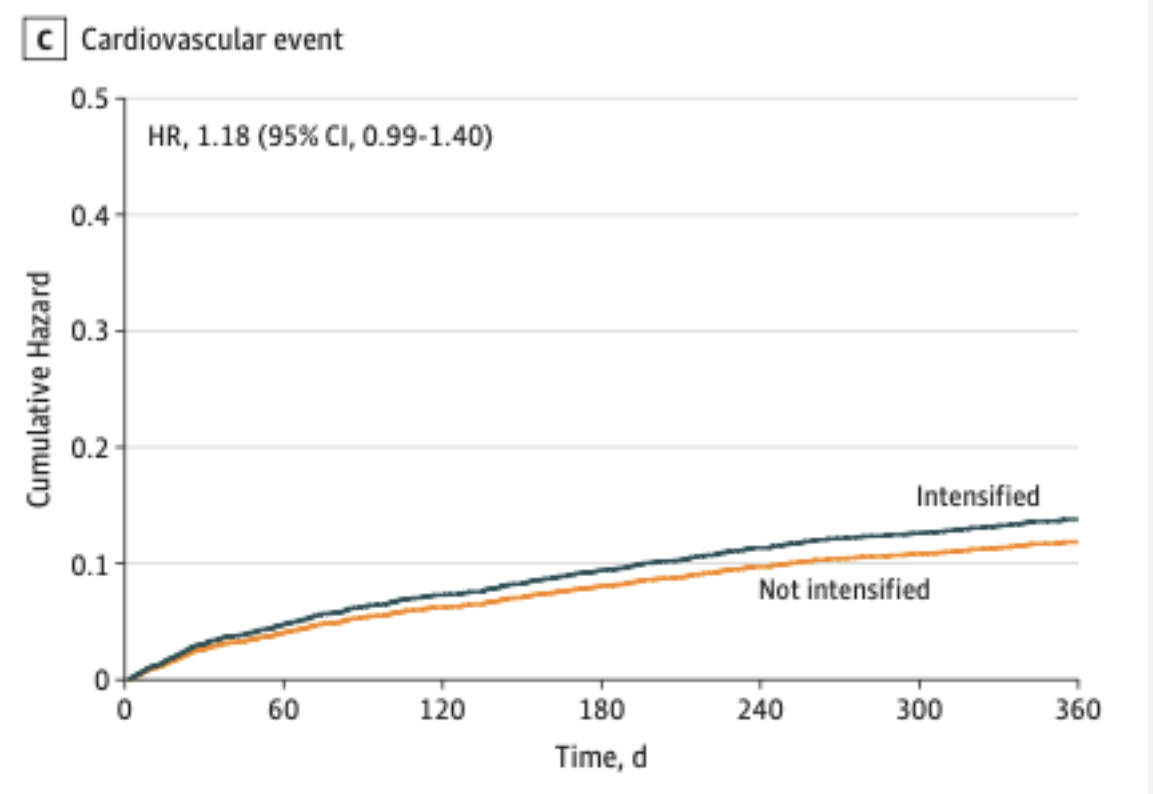
SIGNIFICANT



PRIMARY OUTCOMES

Cardiovascular event within one year

NOT SIGNIFICANT



LIMITATIONS

Potential of confounding factors

Evaluation of SAE inherently limited

Limited follow-up time

Veterans are generally male and comorbid

Only included older patients

MOC QUESTION

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D. Make no changes and defer to PCP

Annals of Internal Medicine

ORIGINAL RESEARCH

Hospital-Level Care at Home for Acutely Ill Adults

A Randomized Controlled Trial

David M. Levine, MD, MPH, MA; Kei Ouchi, MD, MPH; Bonnie Blanchfield, ScD; Agustina Saenz, MD, MPH; Kimberly Burke, BA; Mary Paz, BA; Keren Diamond, RN, MBA; Charles T. Pu, MD; and Jeffrey L. Schnipper, MD, MPH

Question: Is there a difference in outcomes for patients receiving usual hospital care compared to hospital at home?

Study Design: Paralleled design, Randomized controlled trial. Patients were randomized to usual hospital care vs hospital at home. No blinding. Stopped early!

Inclusion Criteria: 18 years or older, live in 5 mile catchment area. Primary or possible diagnosis of any infection, heart failure exacerbation, COPD exacerbation, asthma exacerbation, chronic kidney disease requiring diuresis, diabetes and its complications, gout exacerbation, hypertensive urgency, previously diagnosed atrial fibrillation with rapid ventricular response, anticoagulation needs (e.g., venous thromboembolism), or a patient at the end of life who desires only medical management

Exclusion Criteria: Included, but not limited to, patient, caregiver, admitted or primary care provider declined, resided in nursing facility, >1 person assist, required routine controlled substance administration

INCLUSION AND EXCLUSION CRITERIA

Appendix Table 2. Detailed Inclusion and Exclusion Criteria

Inclusion

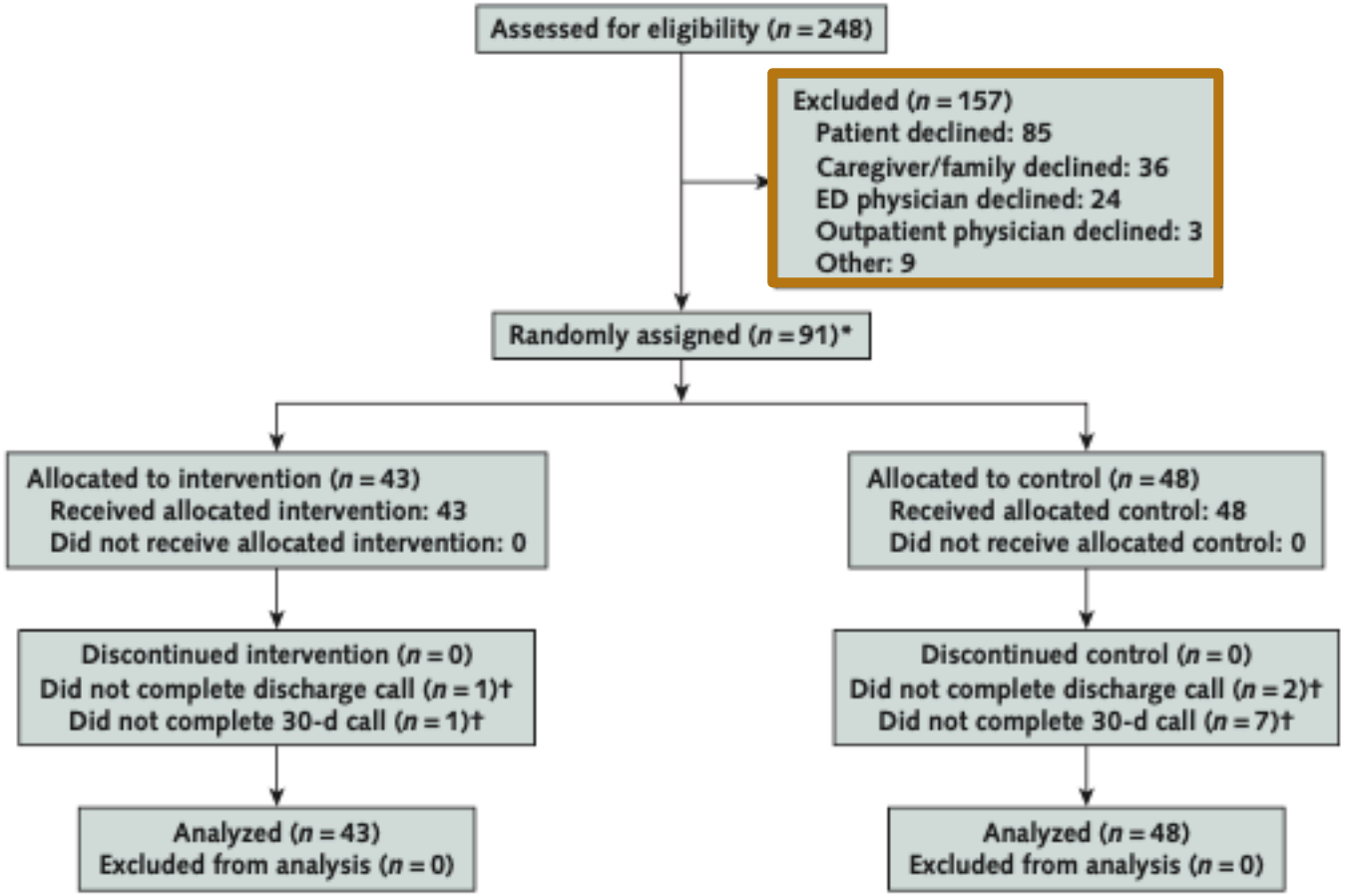
- Clinical
  - Aged ≥18 y
  - Primary or possible diagnosis of any infection, heart failure exacerbation, COPD exacerbation, asthma exacerbation, chronic kidney disease requiring diuresis, diabetes and its complications, gout exacerbation, hypertensive urgency, previously diagnosed atrial fibrillation with rapid ventricular response, anticoagulation needs (e.g., venous thromboembolism), or a patient at the end of life who desires only medical management

Exclusion

- Social
  - Not domiciled
  - No working heat (October–April), no working air conditioning if forecast >27 °C (June–September), or no running water
  - Receiving methadone requiring daily pickup of medication
  - In police custody
  - Resides in facility that provides onsite medical care (e.g., skilled-nursing facility)
  - Domestic violence screen positive (39)
- Clinical
  - Acute delirium, as determined by the Confusion Assessment Method
  - Cannot establish peripheral access in ED
  - Secondary condition: active nonmelanoma/prostate cancer, end-stage renal disease, acute myocardial infarction, acute cerebral vascular accident, or acute hemorrhage
  - Primary diagnosis requires multiple or routine administrations of controlled substances for pain control
  - Cannot independently ambulate to bedside commode
  - As deemed by on-call physician, patient likely to require any of the following procedures: computed tomography, magnetic resonance imaging, endoscopic procedure, blood transfusion, cardiac stress test, or surgery
  - For pneumonia:
    - Most recent CURB-65 score >3 (40)
    - Most recent SMRT-CO score >2 (41)
    - Absence of clear infiltrate on imaging
    - Cavitary lesion on imaging
    - Pulmonary effusion of unknown etiology
    - Oxygen saturation <90% despite 5 L of oxygen
  - For heart failure:
    - Has a left ventricular assist device
    - GWTG-HF (42) (>10% in-hospital mortality) or ADHERE (43) (high risk or intermediate risk 1)
    - Severe pulmonary hypertension
  - For complicated urinary tract infection:
    - Absence of pyuria
    - Most recent qSOFA score >1 (44)
  - For other infection:
    - Most recent qSOFA score >1 (44)
  - For COPD:
    - BAP-65 score >3
  - For asthma:
    - Peak expiratory flow <50% of normal: exercise caution
  - For diabetes and its complications:
    - Requires IV insulin
  - For hypertensive urgency:
    - Systolic blood pressure >190 mm Hg
    - Evidence of end-stage organ damage
  - For atrial fibrillation with rapid ventricular response:
    - Likely to require cardioversion
    - New atrial fibrillation with rapid ventricular response
    - Unstable blood pressure, respiratory rate, or oxygenation
    - Despite IV β and/or calcium-channel blockade in the ED, HR remains >125 beats/min and systolic blood pressure remains different from baseline
    - <1 h has elapsed with HR <125 beats/min and systolic blood pressure similar to or higher than baseline

ADHERE = Acute Decompensated Heart Failure National Registry; BAP-65 = elevated Blood urea nitrogen, Altered mental status, Pulse >109 beats/min, and age >65 y; COPD = chronic obstructive pulmonary disease; CURB-65 = Confusion, Urea, Respiratory rate, Blood pressure, and age ≥65 y; ED = emergency department; GWTG-HF = American Heart Association Get With the Guidelines-Heart Failure; HR = heart rate; IV = intravenous; qSOFA = quick Sequential [Sepsis-related] Organ Failure Assessment; SMRT-CO = Systolic blood pressure, Multilobar chest radiography involvement, Respiratory rate, Tachycardia, Confusion, and Oxygenation.

Figure. Study flow diagram.



ED = emergency department.
* Enrollment was stopped after 91 patients (76% of intended) were enrolled.
† Not completing a discharge call required estimation of postdischarge health care use through the electronic health record and incurred missing values for patient experience measures.

HOSPITAL AT HOME

Features

VitalPatch monitors a total of eight vital signs:

Single-Lead ECG

Heart Rate

Heart Rate Variability

Respiratory Rate

Body Temperature

Body Posture

Fall Detection

Activity

Blood Pressure*

Weight*

Oxygen Saturation*

*Third Party Devices

PRIMARY AND SECONDARY OUTCOMES

Direct Cost

- Health Care Use
- Physical Activity
- Patient Experience
- Safety
- Quality

PRIMARY AND SECONDARY OUTCOMES

Direct Cost

Health Care Use

Mean Adjusted Cost: 38% Lower for Home Care

Mean Unadjusted LOS: 4.5 vs 3.8

Home Care had LESS Imaging, fewer labs, less consultations

Home Care had lower readmission rates (7 vs 23%)

PRIMARY AND SECONDARY OUTCOMES

- Physical Activity
- Patient Experience
- Safety
- Quality

None of the Home Care patients died or required transportation back to hospital.

Pain Scores and Delirium were no different.

Patients were less sedentary and spent less time laying down.

Patients in both groups were highly satisfied with the experience.

LIMITATIONS

Study was only two sites and 5 total MDs

Only a few adverse events were recorded

Structure of Hospital at Home would likely be different at every institution

Stopped early

Does Scheduling a Postdischarge Visit with a Primary Care Physician Increase Rates of Follow-up and Decrease Readmissions?

Felippe O Marcondes, MD[1], Paawan Punjabi, MD[2], Lauren Doctoroff, MD[3,4], Anjala Tess, MD[3,4], Sarah O'Neill, MBA[4], Timothy Layton, PhD[3], Kramer Quist, BS[3], Ateev Mehrotra, MD, MPH[3,4]*

[1]*University of Texas Medical Branch, Galveston, Texas;* [2]*New York University School of Medicine, New York, New York;* [3]*Harvard Medical School, Boston, Massachusetts;* [4]*Beth Israel Deaconess Medical Center, Boston, Massachusetts.*

Lack of Routine Health Care Among Resident Physicians in New England

Erika L Rangel, MD, MS, FACS[a,c], Manuel Castillo-Angeles, MD, MPH[b,c], Mehreen Kisat, MD[b,c], Tovy H Kamine, MD[b,d], Reza Askari, MD, FACS[b,c]

ORIGINAL ARTICLE

Oral versus Intravenous Antibiotics for Bone and Joint Infection

Ho-Kwong Li, M.R.C.P., Ines Rombach, D.Phil., Rhea Zambellas, M.Sc., A. Sarah Walker, Ph.D., Martin A. McNally, F.R.C.S.(Orth.), Bridget L. Atkins, F.R.C.P., Benjamin A. Lipsky, M.D., Harriet C. Hughes, M.A.(Cantab.), Deepa Bose, F.R.C.S., Michelle Kümin, Ph.D., Claire Scarborough, M.R.C.P., Philippa C. Matthews, D.Phil., et al., for the OVIVA Trial Collaborators*

Question: Are oral antibiotics noninferior to intravenous antibiotics for bone and joint infections?

Study Design: Multicenter, open-label, parallel-group, randomized, controlled non-inferiority trial. Study was not blinded. Within 7 days after surgery (or start of antibiotics if non-surgical), patients were assigned to IV or oral antibiotics to finish the course.

Inclusion Criteria: Older than 18, consentable, would have otherwise received 6 weeks of IV antibiotics for several acute or chronic bone/joint infections.

Exclusion Criteria: Concomitant endocarditis, Septic shock, non-bacterial infection, no suitable oral option

PRIMARY AND SECONDARY OUTCOMES

Definitive Treatment Failure

- Probable Failure
- Early Discontinuation
- IV Catheter Complications
- C. Diff Infection
- Serious Adverse Events

Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study

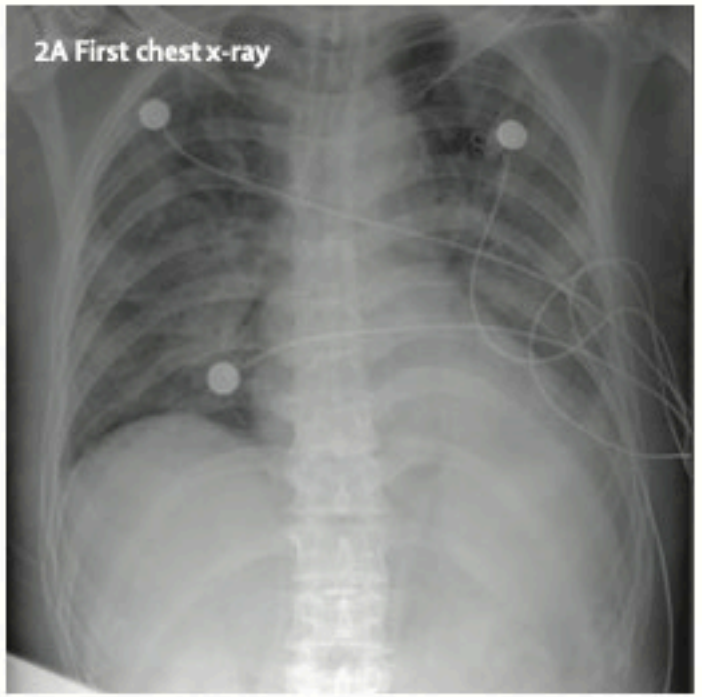
Nanshan Chen, Min Zhou*, Xuan Dong*, Jieming Qu*, Fengyun Gong, Yang Han, Yang Qiu, Jingli Wang, Ying Liu, Yuan Wei, Jia'an Xia, Ting Yu, Xinxin Zhang, Li Zhang*

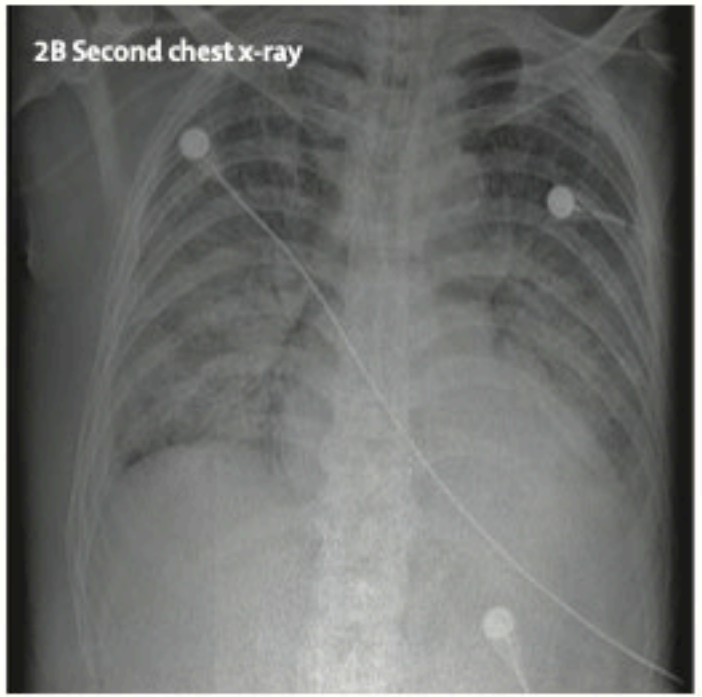
Study Design: Retrospective study of all confirmed COVID-19 cases from Jan 1 to Jan 20, 2020. Cases were confirmed by PCR.

RESULTS

	Patients (n=99)
Signs and symptoms at admission	
Fever	82 (83%)
Cough	81 (82%)
Shortness of breath	31 (31%)
Muscle ache	11 (11%)
Confusion	9 (9%)
Headache	8 (8%)
Sore throat	5 (5%)
Rhinorrhoea	4 (4%)
Chest pain	2 (2%)
Diarrhoea	2 (2%)
Nausea and vomiting	1 (1%)
More than one sign or symptom	89 (90%)
Fever, cough, and shortness of breath	15 (15%)
Comorbid conditions	
Any	33 (33%)
ARDS	17 (17%)
Acute renal injury	3 (3%)
Acute respiratory injury	8 (8%)
Septic shock	4 (4%)
Ventilator-associated pneumonia	1 (1%)
Chest x-ray and CT findings	
Unilateral pneumonia	25 (25%)
Bilateral pneumonia	74 (75%)
Multiple mottling and ground-glass opacity	14 (14%)

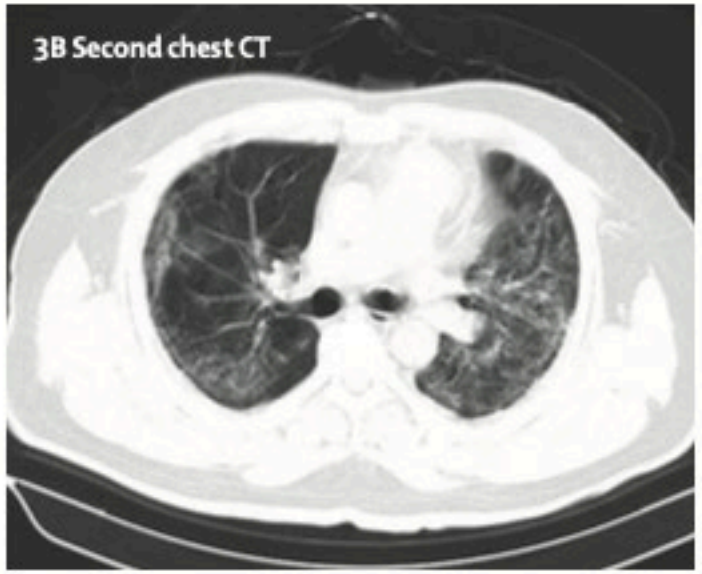
Case 2


2A First chest x-ray


2B Second chest x-ray

Case 3


3A First chest CT


3B Second chest CT

ORIGINAL ARTICLE

Baloxavir Marboxil for Uncomplicated Influenza in Adults and Adolescents

Frederick G. Hayden, M.D., Norio Sugaya, M.D., Nobuo Hirotsu, M.D., Ph.D., Nelson Lee, M.D., Menno D. de Jong, M.D., Ph.D., Aeron C. Hurt, Ph.D., Tadashi Ishida, M.D., Ph.D., Hisakuni Sekino, M.D., Ph.D., Kota Yamada, M.D., Simon Portsmouth, M.D., Keiko Kawaguchi, M.Sc., Takao Shishido, Ph.D., et al., for the Baloxavir Marboxil Investigators Group*

ORIGINAL ARTICLE

Diagnosis of Pulmonary Embolism with D-Dimer Adjusted to Clinical Probability

Clive Kearon, M.B., Ph.D., Kerstin de Wit, M.B., Sameer Parpia, Ph.D., Sam Schulman, M.D., Ph.D., Marc Afilalo, M.D., Andrew Hirsch, M.D., Frederick A. Spencer, M.D., Sangita Sharma, M.D., Frédérick D'Aragon, M.D., Jean-François Deshaies, M.D., Gregoire Le Gal, M.D., Ph.D., Alejandro Lazo-Langner, M.D., et al., for the PEGeD Study Investigators*

Question: Can we use a higher D-Dimer threshold to rule out PE in low risk patients?

Study Design: Outpatients (Clinic, and ED) and Inpatients with signs and symptoms of PE were eligible for enrollment in a Prospective management study.

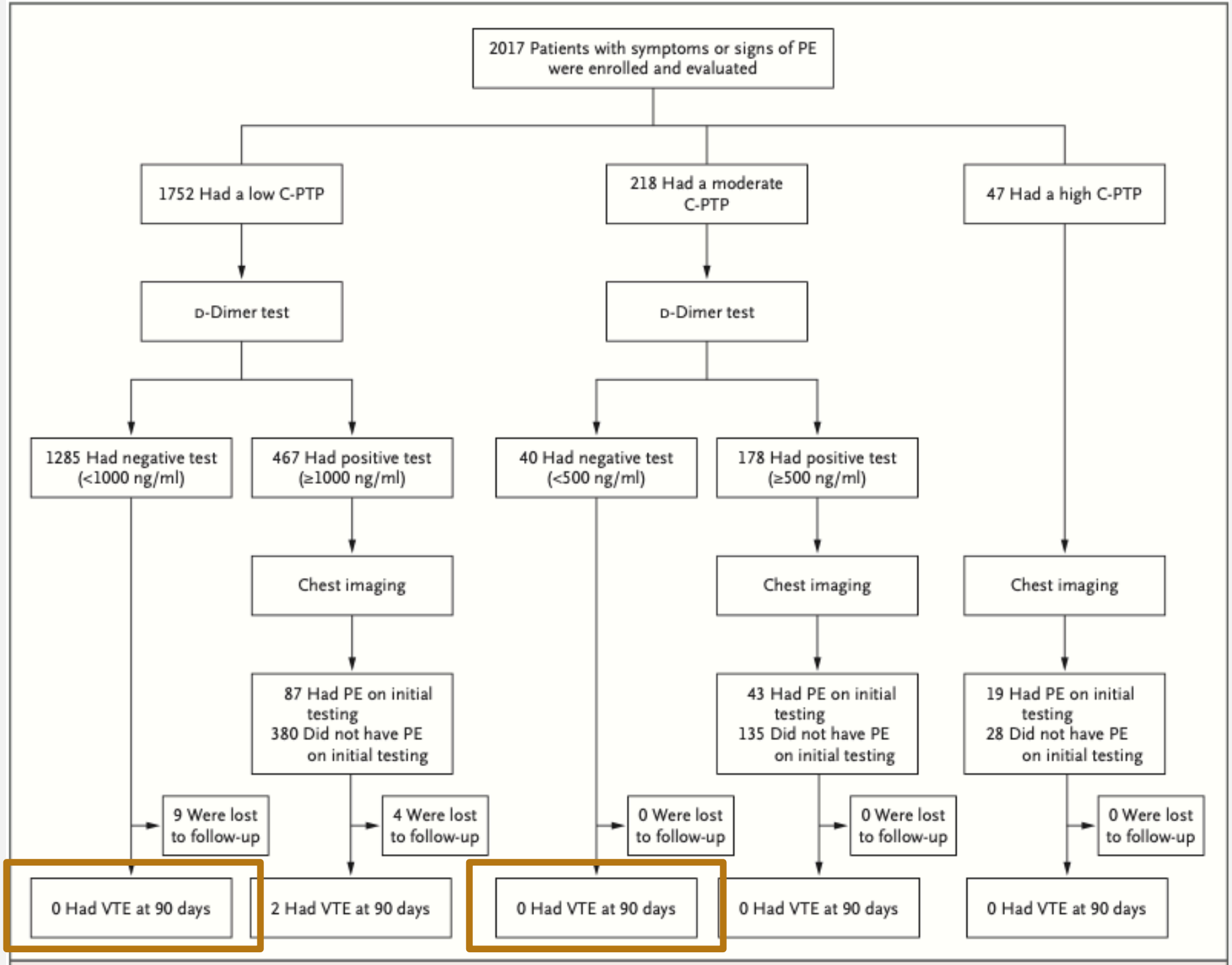
Patients with a low C-PTP and a d-dimer level of less than 1000 ng per milliliter or with a moderate C-PTP and a d-dimer level of less than 500 ng per milliliter underwent no further diagnostic testing for pulmonary embolism and did not receive anticoagulant therapy

Exclusion Criteria: <18, AC in prior 24 hours, major surgery in past 21 days, known D-Dimer or chest imaging before pre-test probability was calculated, ongoing need for AC, life expectancy < 3 months, pregnancy, or inaccessible for follow-up

PRIMARY OUTCOME

Symptomatic, objectively verified VTE

(PE or DVT)


2017 Patients with symptoms or signs of PE were enrolled and evaluated
1752 Had a low C-PTP
218 Had a moderate C-PTP
47 Had a high C-PTP
D-Dimer test
D-Dimer test
1285 Had negative test (<1000 ng/ml)
467 Had positive test (≥1000 ng/ml)
40 Had negative test (<500 ng/ml)
178 Had positive test (≥500 ng/ml)
Chest imaging
Chest imaging
Chest imaging
87 Had PE on initial testing
380 Did not have PE on initial testing
43 Had PE on initial testing
135 Did not have PE on initial testing
19 Had PE on initial testing
28 Did not have PE on initial testing
9 Were lost to follow-up
4 Were lost to follow-up
0 Were lost to follow-up
0 Were lost to follow-up
0 Were lost to follow-up
0 Had VTE at 90 days
2 Had VTE at 90 days
0 Had VTE at 90 days
0 Had VTE at 90 days
0 Had VTE at 90 days

Diagnosis and Treatment of Adults with Community-acquired Pneumonia

An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America

Joshua P. Metlay*, Grant W. Waterer*, Ann C. Long, Antonio Anzueto, Jan Brozek, Kristina Crothers, Laura A. Cooley, Nathan C. Dean, Michael J. Fine, Scott A. Flanders, Marie R. Griffin, Mark L. Metersky, Daniel M. Musher, Marcos I. Restrepo, and Cynthia G. Whitney; on behalf of the American Thoracic Society and Infectious Diseases Society of America

UNCHANGED RECOMMENDATIONS

- Legionella and Strep pn urine antigens
- Aspiration pneumonia does not need anaerobic coverage

NEW RECOMMENDATIONS

- Sputum culture: Obtain in severe disease and if treating empirically for MRSA and pseudomonas
- Amoxicillin
- Macrolides
- HCAP is no more
- Providing empiric antibiotic coverage for MRSA or *P. aeruginosa* is recommended only if there are locally validated risk factors for either pathogen. If local data are not available, before starting such coverage, cultures of blood and lower respiratory secretions should be obtained to guide the need for continuing that treatment. For severe CAP, use of a β-lactam agent plus a macrolide is now favored over a β-lactam agent and a respiratory fluoroquinolone.

Update: Interim Guidance for Health Care Providers for Managing Patients with Suspected E-cigarette, or Vaping, Product Use–Associated Lung Injury — United States, November 2019

Tara C. Jatlaoui, MD[1]; Jennifer L. Wiltz, MD[1]; Sarah Kabbani MD[2]; David A. Siegel[1], MD; Ram Koppaka, MD, PhD[3]; Michele Montandon, MD[4]; Susan Hocevar Adkins, MD[5]; David N. Weissman, MD[6]; Emily H. Koumans, MD[1]; Michelle O'Hegarty, PhD[1]; Megan C. O'Sullivan, MPH[2]; Matthew D. Ritchey, DPT[1]; Kevin Chatham-Stephens, MD[7]; Emily A. Kiernan, DO[8,9]; Mark Layer, MD[9,10]; Sarah Reagan-Steiner, MD[2]; Jaswinder K. Legha, MD[11]; Katherine Shealy, MPH[1]; Brian A. King, PhD[1]; Christopher M. Jones, PharmD, DrPH[11]; Grant T. Baldwin, PhD[11]; Dale A. Rose, PhD[2]; Lisa J. Delaney, MS[6]; Peter Briss, MD[1]; Mary E. Evans, MD[11]; Lung Injury Response Clinical Working Group

1. Screen for Vape use
2. Consider CT Chest in suspected patients
3. Consider outpatient management
4. Co-infection can happen! Test for influenza.
5. Be cautious with corticosteroids
6. Counsel on cessation
7. Flu shots

Use of Anakinra in Hospitalized Patients with Crystal-associated Arthritis

Jean W. Liew and Gregory C. Gardner

Question: Is Anakinra (IL-1 Receptor agonist) safe and effective for inpatient use for patients with acute gout or calcium pyrophosphate crystal arthritis?

Study Design: Restrospective observation study looking at inpatients that received Anakinra.

Inclusion/Exclusion Criteria: Any inpatient that received Anakinra for gout or CPP flare inpatient.

Table 2. Prior treatments, by episode.

Treatments	Episodes, n
NSAID	
1 day	1
> 1 day	1
Colchicine	
≤ 2 doses	19
> 2 doses	7
Prednisone	
1 day	1
> 1 day	22
Intraarticular glucocorticoid	7
Operative washout	3
No other therapy	55

NSAID: nonsteroidal antiinflammatory drug.

RESULTS

Table 4. Responses by episode.

Responses	Episodes, n
Significant response or complete resolution by 4 days	86
Delayed response > 4 days	2
Partial response	7
Nonresponse	6
Insufficient information	14

WAYS TO STAY UP TO DATE

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QUESTIONS?