COVID-19; SARS; AVIAN FLU

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Introduction

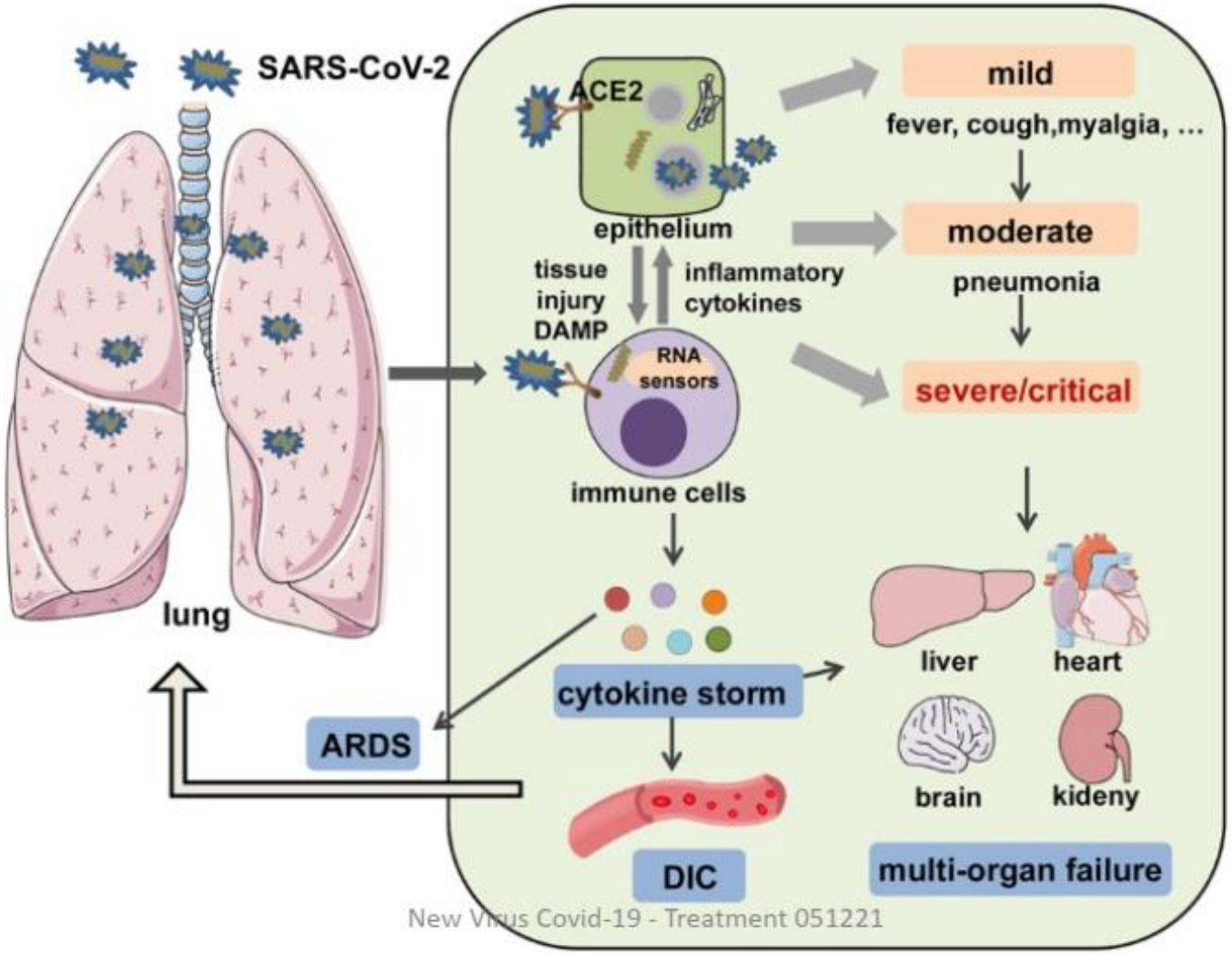
- Coronavirus disease 2019 (COVID-19) is an infectious acute respiratory disease caused by a novel coronavirus
- The WHO was informed of cases of pneumonia of unknown microbial aetiology associated with Wuhan City, Hubei Province, China on 31 December 2019
- Formally declaring it a pandemic on 11 March 2020
- The clinical presentation : a respiratory infection with a symptom severity à a mild common cold-like illness, to a severe viral pneumonia leading to acute respiratory distress syndrome that is potentially fatal

Introduction

Overall Covid-19 Epidemiology

- Over 262.8 million cases have been reported globally
- Approximately 5.2 million deaths
- The US has the highest number of reported infections and deaths in the world
- India, Brazil, the UK, and Russia have the highest number of infections after the US

Pathogenesis Peumonia Covid-19

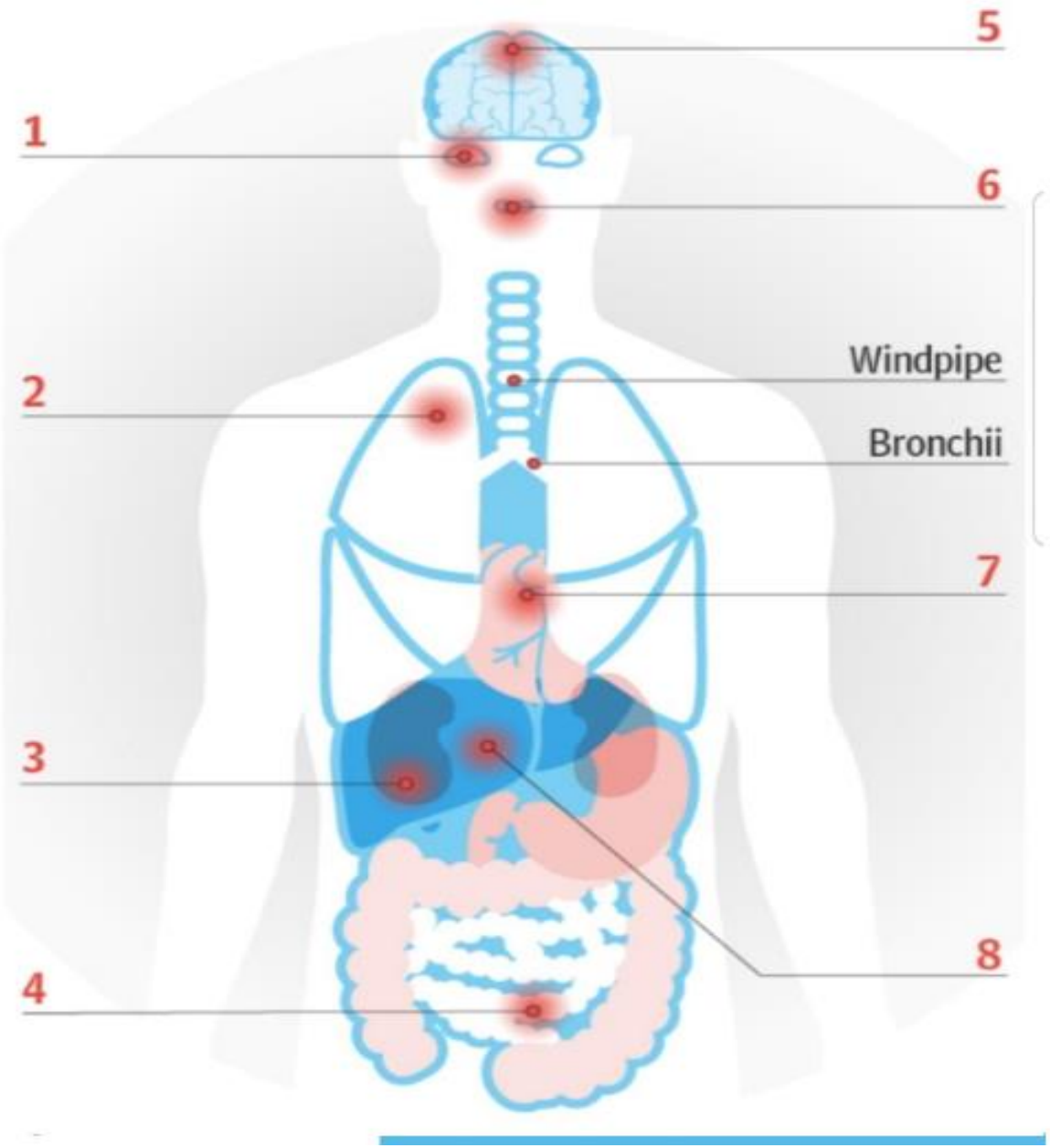


Tabel: Characteristic 582 of Covid-19 patients

Characteristic	Value
Age (years)	
Average	44.5
Range	2–85
Sex	
Female	238 (41%)
Male	344 (59%)
Complete preanalytical form	246 (42%)
Asymptomatic	55 (22%)
Mild cases (self isolation)	84 (34%)
Moderate to severe cases (hospitalized)	107 (44%)
History of travel	8 (3%)
History of contact with COVID-19 patients	
Yes	88 (36%)
No	158 (64%)
Patient with comorbidities	43 (17%)
Cardiovascular disease	24 (58%)
Diabetes mellitus	16 (37%)
Other	11 (25%)
Multiple	9 (2%)
Symptoms	191 (78%)
Respiratory problem (with or without other symptoms)	140 (73%)
Respiratory problem with fever	62 (32%)
Respiratory problem and other symptoms without fever	44 (23%)
Headache, malaise or gastrointestinal problem only	10 (4%)
Radiologic findings of pneumonia	64 (24%)
Distribution of cases per province	
DKI Jakarta	184 (75%)
West Java	33 (13%)
Banten	29 (12%)

COVID-19, coronavirus disease 2019.

How Covid-19 affects the body



1 **Eyes** Conjunctivitus, inflammation of the membrane that lines the front of the eye and inner etelid, is common in the sickest patients

2 **Lungs** Virus causes the air sacs in the lungs to become inflamed and damaging to the walls – this results in coughs, fevers and laboured breathing. It can lead to a potentially fatal condition known as acute respiratory distress syndrome (ARDS)

3 **Kidneys** Kidney damage is common in severe cases and makes death more likely

4 **Intestines** Virus can infect lower gastrointestinal tract, which can cause about 20% of patients to suffer from diarrhoea

5 **Brain** Some patients have suffered strokes, seizures, confusion and brain inflammation

6 **Nose** Some patients lose sense of smell. Scientists believe virus moves along nose's nerve endings and damage cells

7 **Heart and blood vessels** Scientists believe infection may promote blood clots, heart attacks and cardiac inflammation as the virus binds to ACE2 receptors and enters cells lining blood vessels

8 **Liver** Up to 50% of hospitalised patients have indication of struggling liver function. The immune system in overdrive or drugs given to fight the virus may be causing damage

WHO severity definitions

Critical Covid-19

- Acute respiratory distress syndrome (ARDS) sepsis, septic shock or other conditions that would normally require the provision of life-sustaining therapies such as a mechanical ventilation (invasive or non-invasive) or vasopressor therapy

Severe Covid-19

- Oxygen saturation < 90% on room air
- In adults: signs pf severe respiratory distress (accessory muscle use, inability to complete full sentences, RR > 30x/min)

Non-severe Covid-19

- Defined as absence of any criteria for severe or critical Covid-19

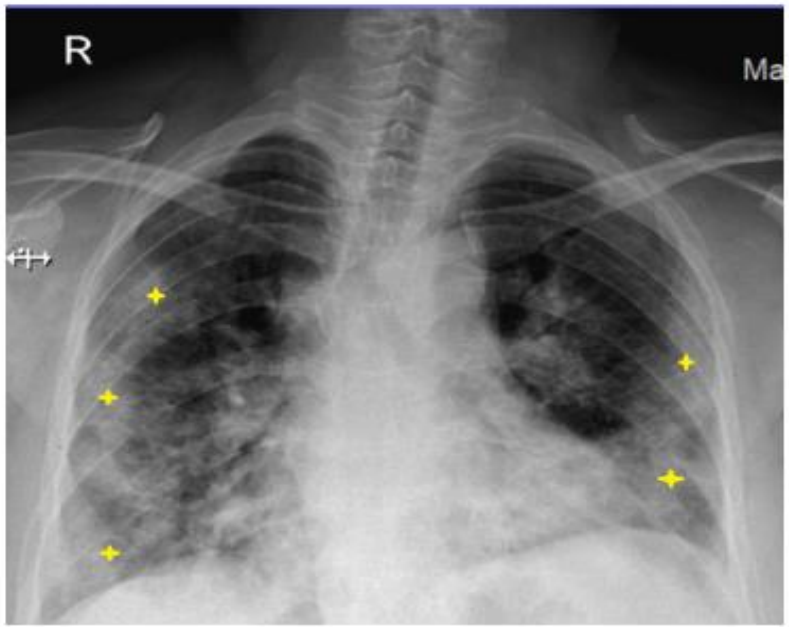
Population

This recommendation applies only to people with these characteristics:

Patients with confirmed covid-19

Disease severity

Non-severe	Severe	Critical
Absence of signs of severe or critical disease	Oxygen saturation <90% on room air	Requires life sustaining treatment
	Signs of pneumonia	Acute respiratory distress syndrome
	Signs of severe respiratory distress	Sepsis
		Septic shock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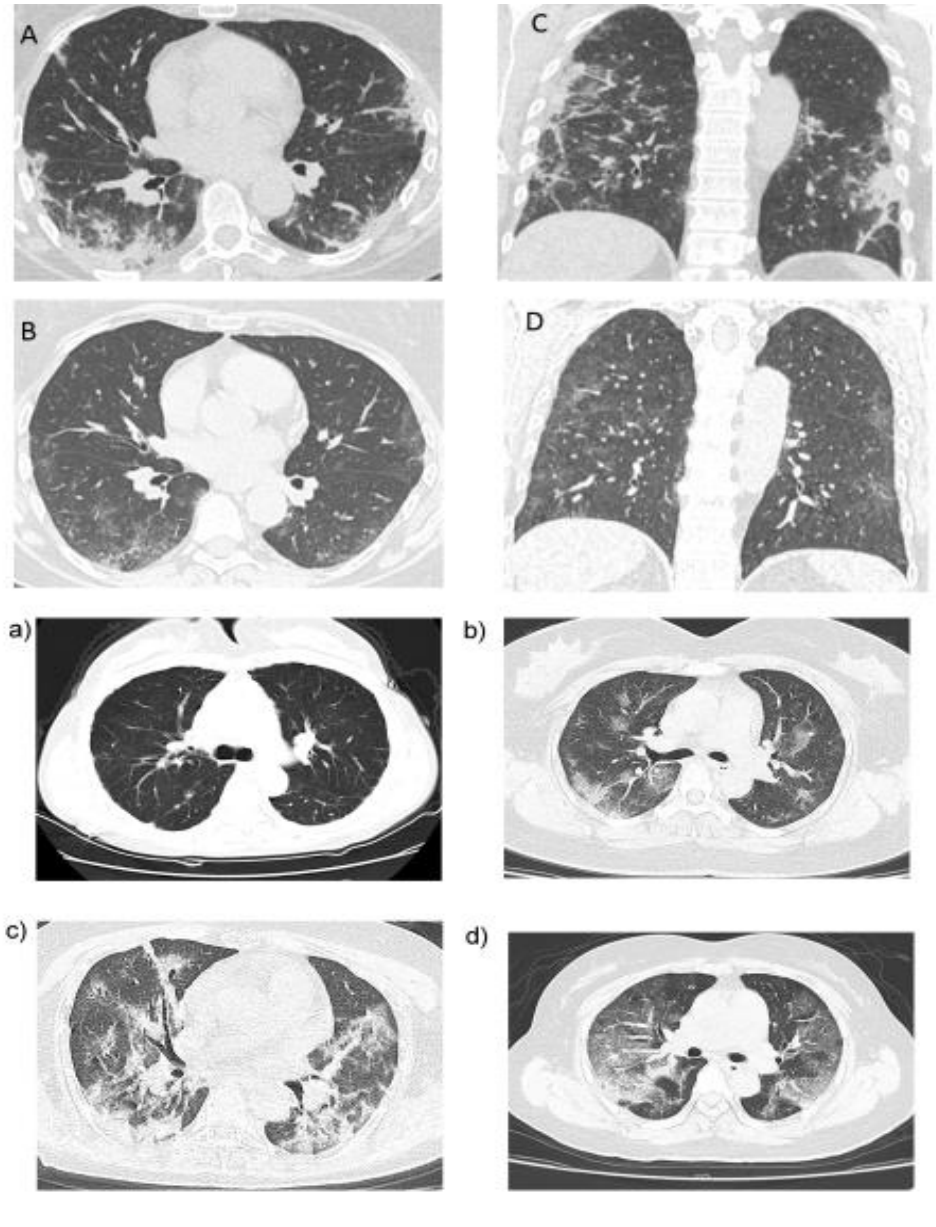
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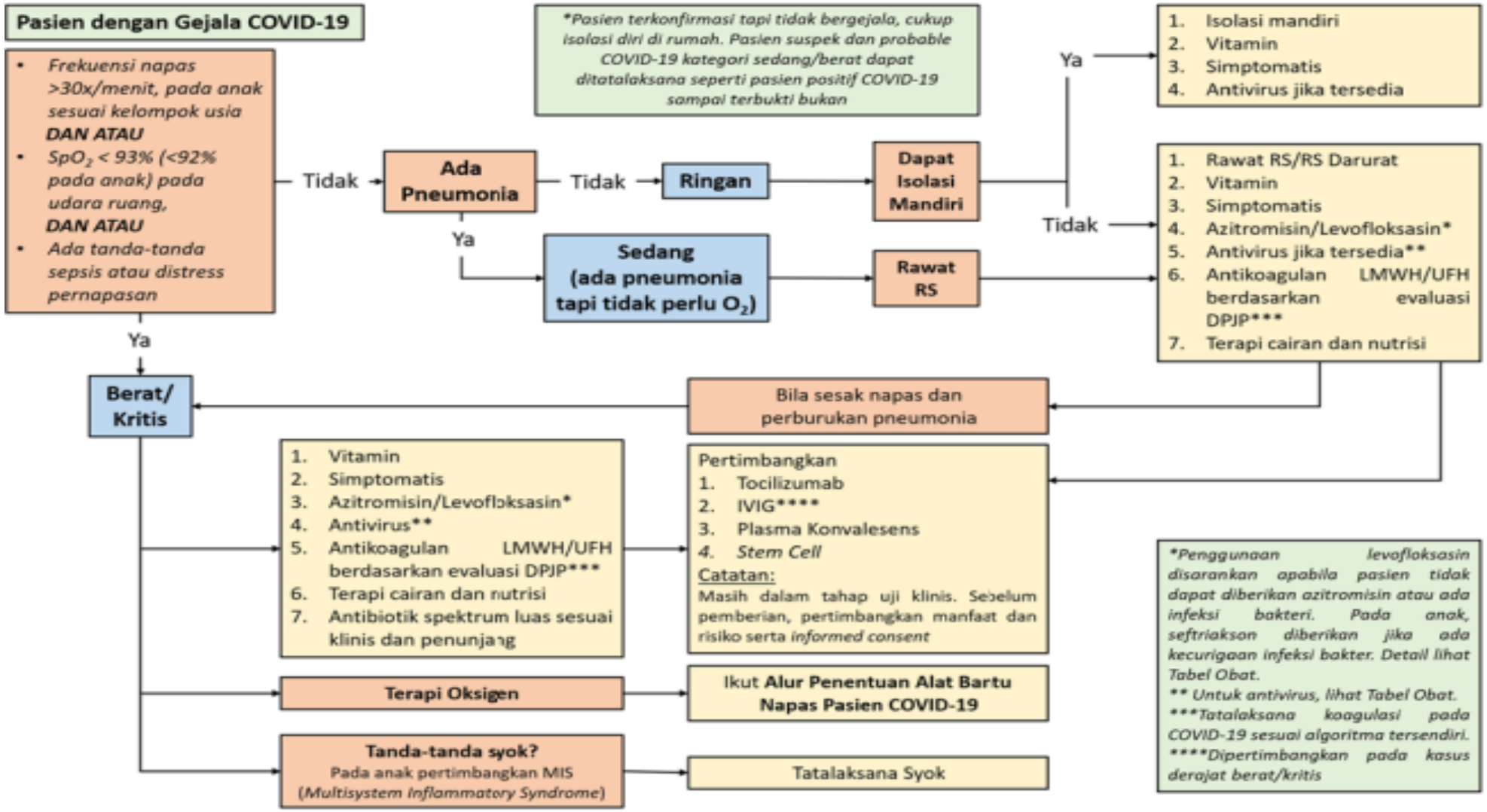
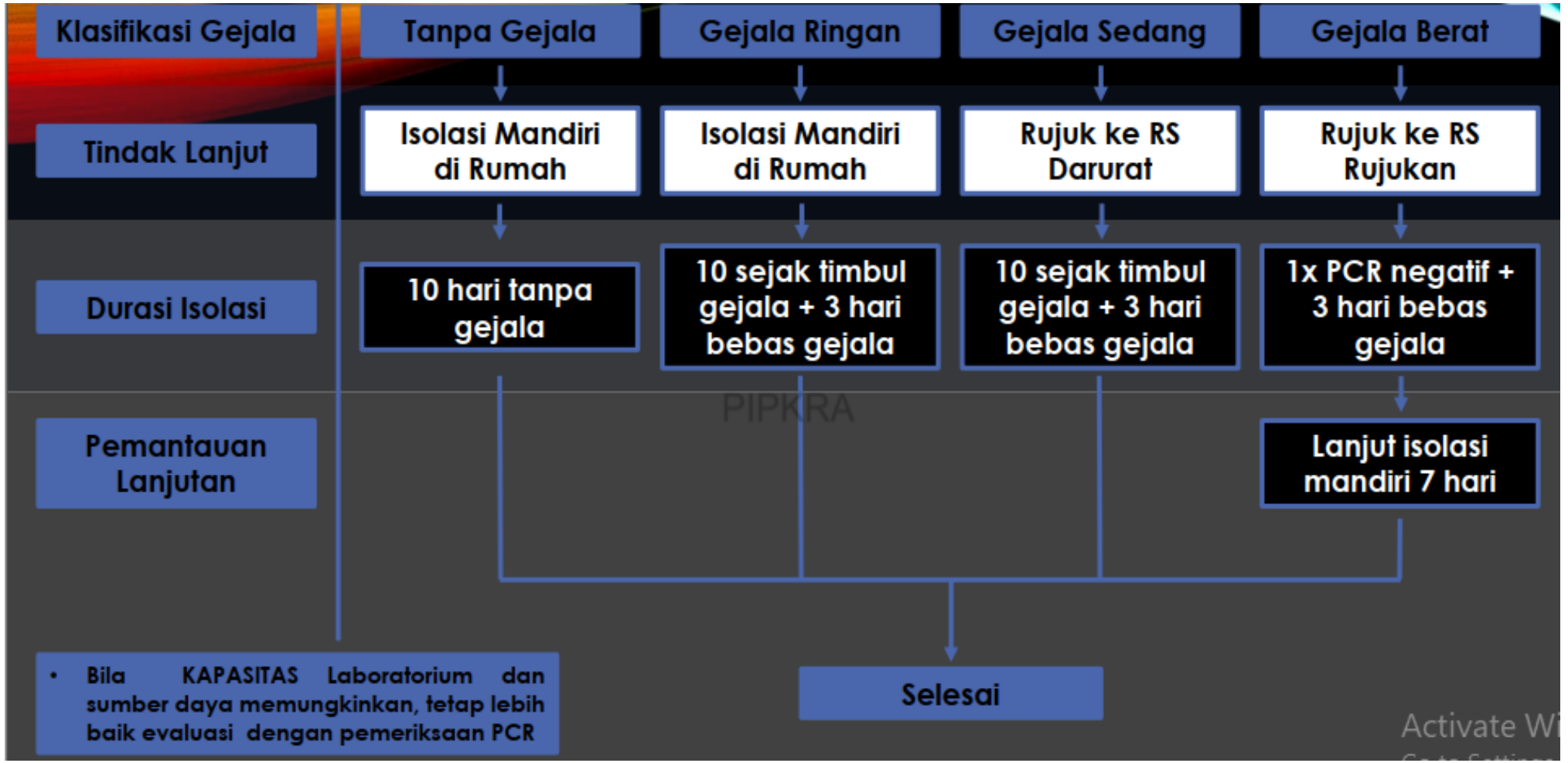
Alur tatalaksana pasien COVID-19



Tatalaksana pasien COVID-19



Pencegahan COVID -19

TUJUAN VAKSINASI :

- menurunkan jumlah kesakitan & kematian
- mencapai kekebalan kelompok (*herd immunity*)
- melindungi dan memperkuat sistem kesehatan secara menyeluruh, serta menjaga produktivitas dan meminimalisasi dampak sosial dan ekonomi dari COVID- 19

Pencegahan COVID -19 : Jenis Vaksin di dunia

Vaksin	Platform	Dosis	Interval (hari)
Sinovac	Inactivated virus	2 x im	14-28
Sinopharm	Inactivated virus	2 x im	14-21
AstraZeneca	Viral vector	2 x im	28
Cansino	Viral vector	2 x im	21
Gamaleya (Sputnik V)	Viral vector	2 x im	21
Johnson & Johnson	Viral vector	1 x im	-
Novavax	Protein subunit	2 x im	21
Moderna	RNA	2 x im	28
Pfizer/ BioNTech	RNA	2 x im	28
Zifivax/Anhui	Recombinant subunit	2 x im	28

KIPI (Kejadian Ikutan Pasca Imunisasi)

- Non-serius, wajar : demam, lemas, mengantuk, nyeri sendi, nyeri otot, sakit kepala, dan nyeri di tempat penyuntikan.
- Reaksi lain : reaksi alergi berupa gatal dan bengkak, reaksi anafilaksis, *syncope/* pingsan.
- Reaksi KIPI : umumnya ringan, sementara, dan tidak selalu ada; bergantung pada kondisi tubuh.
- Walaupun terdapat risiko KIPI, manfaat vaksin masih jauh lebih besar dibandingkan risiko sakit COVID-19 akibat tidak divaksin.

SARS (Severe Acute Respiratory Syndrome)

SARS (Severe Acute Respiratory Syndrome)

- Definisi SARS: kumpulan gejala penyakit atau gangguan pada sistem pernapasan yang disebabkan oleh **infeksi Coronavirus** jenis SARS-CoV (SARS-associated coronavirus).
- Epidemiologi: 2002 SARS pertama kali dilaporkan di Guangdong, China, teridentifikasi pada bulan Februari 2003. Menyebar ke lebih dari 24 negara di Amerika Utara, Amerika Selatan, Eropa, dan Asia. Sejak tahun 2004, tidak ada kasus SARS lagi yang dilaporkan di dunia.

Gejala SARS:

- Gejala awal SARS mirip dengan **influenza**, tetapi dapat memburuk dengan cepat. Biasanya gejala muncul 2-14 hari setelah terinfeksi virus SARS-CoV, diantaranya:
- Demam tinggi (lebih dari dari 38 derajat Celcius)
- Batuk kering
- Sesak napas
- Nafsu makan menurun
- Mudah lelah
- Menggigil
- Sakit kepala
- Nyeri otot
- Diare
- Mual dan muntah

Terapi SARS

- Tx SARS tergantung pada tingkat keparahannya.
- Gejala ringan: isolasi mandiri di rumah untuk pemulihan. Jika gejala memburuk, harus dirawat di rumah sakit untuk mendapatkan perawatan intensif seperti pemberian oksigen atau bahkan alat bantu nafas.
- Tidak ada obat yang dapat menyembuhkan virus penyebab SARS. Antibiotika diberikan untuk melawan infeksi sekunder disebabkan oleh bakteri lain selama masa pemulihan.

Pencegahan SARS

- Menjaga PHBS seperti mencuci tangan dengan sabun dan air atau menggunakan hand sanitizer berbasis alkohol.
- Jangan menyentuh bagian hidung, mata, atau mulut dengan tangan kotor
- Menggunakan masker di tempat publik untuk menghindari kontak dengan droplet dan terutama ketika kontak dengan penderita SARS
- Membersihkan permukaan benda-benda pribadi atau barang di tempat umum dengan desinfektan sebelum menyentuhnya.

FLU BURUNG/AVIAN FLU

Sejarah Wabah Influenza

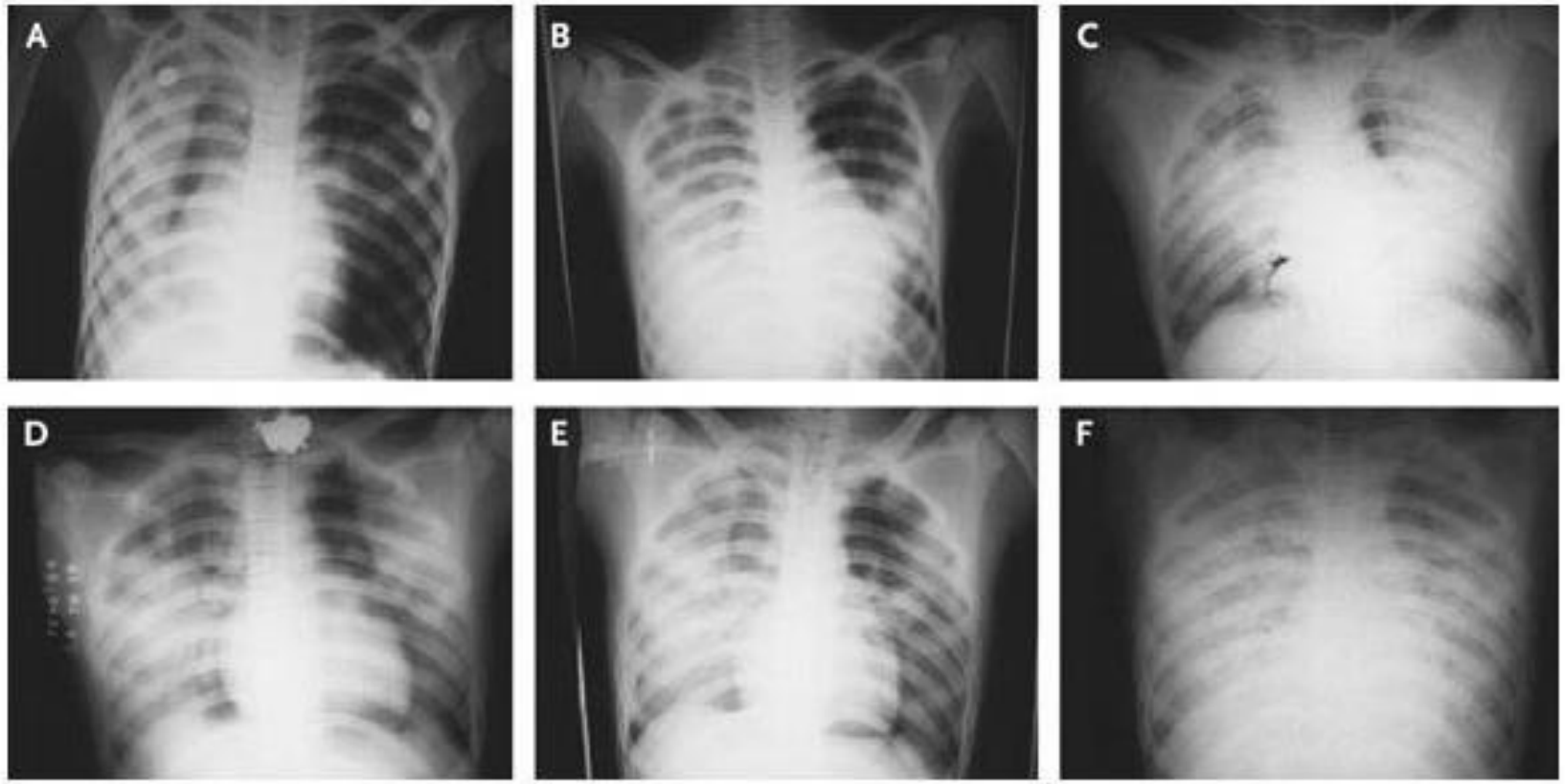
- 1918: Spanish flu, etiologi: virus influenza A (H1N1)
- 1957: Asis, etiologi: H2N2
- 1968: H3N2
- 1997: H5N1, avian influenza outbreak di Hongkong.
- 15 Januari 2007: data WHO di Indonesia terjadi 4 kasus dan 3 di antaranya meninggal dunia

3 Faktor Penyebab Wabah Flu Burung (Virus H5N1)

1. Kemampuan virus H5N1 untuk menginfeksi manusia. Virus H5N1 awalnya menginfeksi jenis burung. Virus ini bermutasi menjadi virus yang bisa menginfeksi manusia.
2. Tidak adanya kekebalan manusia terhadap virus H5N1.
3. Sifat patogen virus H5N1 yang tinggi. Berdasar data WHO, secara global telah terjadi 267 kasus H5N1 pada manusia dan 161 diantaranya meninggal dunia (*www.who.int*) . Tingkat kefatalan/mortalitas H5N1 : 60 %.

Gambaran Klinis Flu Burung:

- Demam, takipnea (88%), batuk (88%), nyeri tenggorok (75%), myalgia (50%), Perdarahan gusi (38%), diare (38%). Conjungtivitis, sakit kepala, and rhinorrhea (12%).
- Radiologi: tampak gambaran thoraks pneumonia, normal pada kasus ringan, Kelainan foto toraks terbanyak infiltrat luas bilateral, kolap lobus, konsolidation fokal, *air bronchograms,* pneumonia progresif cepat.
- Laboratorium: Lekopenia, limfopenia, trombopenia. RT–PCR H5N1 dari swab nasofaring, SGPT/SGOT meningkat, LDH meningkat,kreatin kinase meningkat. Tidak ada pertumbuhan bakteri pada kultur darah dan sputum.



Radiographs from Patient 5 (Panel A), Patient 7 (Panel B), and Patient 9 (Panel C) show widespread consolidation, collapse, and interstitial shadowing. In Panels D, E, and F, three chest radiographs show the progression in Patient 8 on days 5, 7, and 10 of illness, respectively.

Terapi Flu Burung

- Tergantung tingkat keparahan px.
- Suportive: O2 nasal kanul - ventilator mekanik; IVFD: cegah dehidrasi, mempertahankan sirkulasi
- Neuramidase inhibitor: oseltamivir and zanamivir
- AB diberikan bila disertai infeksi sekunder


THANK YOU