First Line Covid-19
10 things...
From ER to the times of Corona

During these first few weeks of direct experience in the field we have collected several observations that we deem useful to convey in order to inform, improve response and perhaps prevent or correct some errors.

10 THINGS NOT TO DO

- **Think that an extraordinary situation can be managed using ordinary logic**
- **Maintain the same standards during the pre-epidemic phase and the epidemic phase** - Practically speaking, if containment measures are essential in the pre-epidemic phase then, in the epidemic phase it is essential not to waste time and to focus on the patients rather than worry about contact
- **Be unprepared** - Hospitals must be empty and ready at least 10 days in advance of the beginning of the epidemic phase (thus already during the pre-epidemic phase), otherwise they will not be able to bear the impact of the accesses, the ER will fill up with as many patients as Intensive Care, and this will frustrate containment efforts
- **Think that the results of the swab tests have a certain correlation with clinical presentation and are required to diagnose patients with symptoms** - The serious syndromic picture is unmistakable and repeats itself regularly: there is a combination of marked hypoxemia and respiratory alkalosis, multiple interstitial pulmonary mantle thickenings (evidenced by ultrasound, CT or X-ray), and leukopenia, there is a sensitivity and specificity close to 100%; up to 1/3 of Covid-19 related ARDS have a negative initial nasopharyngeal swab test. Making the diagnosis dependent on a positive swab test in the epidemic phase is an error.
- **Wait for the result of the swab test before admitting symptomatic patients with a typical syndromic picture** - Waiting blocks the flow of patients, which should be continuous to take proper care of newcomers; the decision to send patients to COVID-19 wards only on the basis of the swab test is wrong (the pre-test probability of the disease is very high in patients with a typical picture)
- **Delay CPAP in severe interstitial diseases, especially in young males** - Waiting for the clinical picture to worsen before starting a PEEP support is wrong
- **Delay intubation in patients with ARDS** - Leaving the patient in hypoxia with progressive respiratory distress is wrong
- **Use too high a PEEP** - It is necessary to oxygenate and recruit alveolar spaces, but also to favour diaphragmatic mobility
- **Always keep serious patients supine** - It is essential to pronate all patients who can (also when using O2, CPAP or NIV) as soon as possible
- **Hydrate too much or not at all and neglect nutrition** - All patients are very thirsty and should be hydrated (to avoid hypovolemia and kidney damage with albuminuria), but it's equally important avoid fluid overload and ensuring adequate caloric intake to cope with the increased need

Segreteria Nazionale:
Via Valprato, 68 – 10155 Torino
segreteria@simeu.it
Tel. 02 67077483 - Fax 02 89959799

SIMEU
società italiana medicina d'emergenza-urgenza
CENTRO STUDI

www.simeu.it

10 THINGS TO DO

- **Be flexible**, modify organizational and staff management models
- **Adapt** literature evidence, protocols and procedures to one's own reality**,** in order to optimize the result
- **Limit activities to the** essentials
- Establish **filter areas** and use PPE correctly
- Use what you need, and **do not waste** equipment, devices and disposable materials
- **Estimate the necessary amounts** of oxygen, materials and equipment, and take care tof logistics and supplies
- **Identify critically ill patients and treat them quickly**
- Organize **regular communication services to the relatives** of patients in the ER, keeping incoming communications to the ER to a minimum
- Protect relatives of healthcare professionals (**self-quarantine**)
- Set up **counseling** services for healthcare professionals from the start

10 POSITIVE SIGNALS FROM PATIENTS

- **Walking test** without desaturation by digital oximetry, no hypoxemia on the ABG no interstitial-alveolar involvement on diagnostic imaging
- Reduced **respiratory rate**
- Adequate **tissue perfusion** (cutaneous)
- **Defervescence** with subjective and clinical improvement
- Improvement of **oxygen exchange** with the same FiO2 or during PEEP reduction
- Rapid **weaning** from CPAP with stable vital signs
- Good **response to prone position** (also using NIV or CPAP)
- Regular ultrasound appearance of the **pleural line**, and **interstitial syndrome** with B lines but without parenchymal consolidation
- Progressive reduction of **lung areas of interstitial and alveolar involvement** on ultrasound
- Preserved **systolic function** in the left and right ventricle

10 POSITIVE SIGNALS FOR THE ER AND THE HOSPITAL

- Organizational flexibility, with quick adjustments
- Effective coordination by the Crisis Unit
- COVID path preparation with an adequate ratio of beds in the ICU, sub-intensive care units and the general ward
- Good attitude of the ward units and departments to organization rearrangements
- Quick structural adjustments including masonry work for the filter areas
- Maintenance of services and supplies
- Quick change in service standards according to the context
- System hold during first peak of flow
- System hold during subsequent peaks
- Health care workers resilience

10 RED FLAGS FROM PATIENTS

- **Skin and tissue hypoperfusion** with waxy complexion or livedo reticularis without hypotension
- Severe oxygen **desaturation** without dyspnea
- Oxygen **desaturation** with steady FiO2
- **Fever** with chills
- **Sensory** changes
- **Syncope**
- Onset of **atrial fibrillation**
- Increase in **troponin** values
- **Worsening** of the ultrasound pattern with extension of the interstitial syndrome to the anterior and apical fields, appearance of new consolidations or pleural effusion
- **Worsening** of cardiac function moving from a hyperkinetic pattern with thin inferior vena cava to depression of left and/or right ventricular systolic function with dilated and fixed inferior vena cava

10 RED FLAGS FOR THE ER AND THE HOSPITAL

1. Saturation of bed/stretchers in the **ER**
2. Saturation of beds for admission to the **ICU**
3. Saturation of beds in the **wards**
4. Depletion or inadequate supply of **ventilation devices**
5. Depletion or inadequate supply of **disposable materials** (ABG syringes, drugs, etc.)
6. Depletion of **oxygen**
7. Lack of a clear **chain of command**
8. Lack of information or instructions from the **Crisis Units**
9. Use of different **therapeutic protocols** in the same healthcare facility
10. Increase of **healthcare workers presenting symptoms** due to physical or psychological problems

Stefano Paglia - ER Complex Operative Unit Director, ASST Lodi
Andrea Magnacavallo - ER Operative Unit, Short-Stay Observation and Emergency Medicine Director, AUSL Piacenza
Roberto Cosentini - Highly Specialized Emergency Operative Unit (ER) Director, ASST Bergamo
Antonio Voza - Highly Specialized Emergency Operative Unit (ER) Director Humanitas, Rozzano (Milan)
Vito Cianci - Admissions and ER Operative Unit Director, AO Padua
Tiziana Perin - Emergency Medicine Operative Unit (ER) Director, AUSL Romagna, Rimini
Francesca Cortellaro - Admissions and ER Director ASST Santi Paolo e Carlo, Milan
Andrea Bellone - ER Operative Unit and Emergency Medicine Director, Niguarda Hospital, Milan
Anna Maria Brambilla - Emergency Medicine and ER Operative Unit Director - ASST Fatebenefratelli Sacco - P.O. Luigi Sacco, Milan
Giorgio Costantino - Emergency Medicine and ER Operative Unit Director IRCCS Cà Geanda Foundation, Maggiore Polyclinic, Milan
Ciro Paolillo - ER Operative Unit Director, ASST Spedali Civili, Brescia
Giovanni Buonocore - ER Operative Unit Director, Merate Hospital, ASST Lecco
Stefano Perlini, Director, Emergency Medicine Postgraduate Training Program IRCCS Policlinico San Matteo Foundation, University of Pavia
Guido Bertolini - Mario Negri Pharmacological Research Institute IRCCS, Covid-19 Crisis Response Unit, Lombardy Region
Gian A. Cibinel - ER/Emergency and Admissions Department Area Coordinator Covid-19 Crisis Response Unit, Piedmont Region