



Emergency surgery and trauma during COVID-19 pandemic: safe, smart and kind!

Hayato Kurihara¹

© Springer-Verlag GmbH Germany, part of Springer Nature 2021

Due to the coronavirus 2019 (COVID-19) pandemic, health care systems all over the world have been strongly challenged simultaneously.

Along with intensivists, nurses and many other health care professionals, emergency general surgeons and trauma surgeons acted as first responders since the very beginning of the pandemic outbreak, taking immediate action to face this global “mass casualty”.

Although the outbreak of the pandemic was sudden and massive, the community of emergency and trauma surgeons was not taken by surprise: the response was immediate and the challenge was accepted with enthusiasm and, mostly, resilience. The pandemic outbreak affected the surgical community in different ways such as cancelation of unnecessary immediate surgery, shift of surgeons in different areas, blood components shortage, need to set up dedicated pathways and COVID-19 areas [1].

Surgeons and nurses, especially in the field of trauma and emergency surgery, are used to live constantly in stressful situations and are always ready to respond to complex scenarios with multiple critically ill patients. All of us had to adapt to drastic shift in daily life and routine activities looking forward to new surgical tracks for our patients, furthermore we changed our respective roles getting out of our comfort zone and actually, this is what emergency general and trauma surgeons do every day. Among our peculiar surgical community, not surprisingly, the need to share new acquired informations related to the pandemic was massive and many readers of this journal surely appreciated the privilege of being part of an international network such as the European Society for Trauma and Emergency Surgery (ESTES) which, at the very beginning of the outbreak, published the *ESTES recommendations for trauma and*

emergency surgery preparation during times of COVID-19 infection [2].

New communication technologies, such as web-based meetings and social media, but also personal contacts within ESTES, had enormously facilitated an international cooperation making possible to spread the new acquired informations very quickly in terms of redistribution of resources, personal protection equipment, dedicated pathways and systems’ design to enhance safety in surgery [3, 4].

Although the overall volume of injuries and cases with acute abdominal conditions admitted to the emergency department decreased due to lockdown and containment strategy, new challenges had to be managed [5–8]; skeletal trauma surgeons reported higher mortality rates in COVID-19 positive patients with hip fractures [9] and an increasing incidence proportion of emergency operations and severe open fractures [10], while emergency general surgeons, to spare resources and protect the population, had to modify their decision making process shifting towards a tailored conservative approach and struggled with more severe cases due to late presentation of patients with acute abdominal conditions [11–13].

In one report from UK the trauma system itself had been even more overwhelmed by the fact that patients admitted during the COVID-19 pandemic were older, frailer and with higher co-morbidity with associated increased risk of mortality [6]; while due to reallocation of surgeons in other areas, in order of obligations to take different in-hospital tasks, and due to progressive transmission of the novel coronavirus (2019-nCoV) among care providers, some surgeons had to take significantly more calls [14] struggling with burn-out.

One of the most underestimated concerns raised by the COVID-19 outbreak needs to be addressed to surgical mentorship. The decrease of patients’ volume and redistribution of human resources among surgical staff members negatively affected the educational needs of our residents. Although our fellows, in most of the cases, accepted the

✉ Hayato Kurihara
hayato.kurihara@humanitas.it

¹ Emergency Surgery and Trauma Unit, IRCCS, Humanitas Research Hospital, Via Manzoni 56, 20089 Rozzano, Italy

challenge and offered their medical competences to assist the population in different manners such as vaccination shifts, medical assistance in COVID-19 units and phone calls for patients' family update, they suffered the pandemic scenario since their professional growth had to enter in a *stand-by mode*; this is something we and ESTES should be aware of and our surgical community should strive to fill this gap. Lots of webinars from different surgical societies have been organized to replace face to face confrontation and minimize this educational cultural loss, but nothing will replace the intuitional power of bedside and preoperative surgical education.

During the first months of the pandemic, Dr. Tedros Adhamon Ghebreyesus, WHO Director General, tweeted: "*Be safe, be smart, be kind*". It seems that the ESTES members spontaneously followed his graceful proposition.

Declarations

Conflict of interest The author declares that they have no conflict of interest.

References

- Kurihara H, Bisagni P, Faccincani R, Zago M. COVID-19 outbreak in Northern Italy: viewpoint of the Milan area surgical community. *J Trauma Acute Care Surg.* 2020;88(6):719–24. <https://doi.org/10.1097/TA.0000000000002695>.
- Coimbra R, Edwards S, Kurihara H, Bass GA, Balogh ZJ, Tilsed J, Faccincani R, Carlucci M, Martínez Casas I, Gaarder C, Tabuenca A, Coimbra BC, Marzi I. European Society of Trauma and Emergency Surgery (ESTES) recommendations for trauma and emergency surgery preparation during times of COVID-19 infection. *Eur J Trauma Emerg Surg.* 2020;46(3):505–10. <https://doi.org/10.1007/s00068-020-01364-7>.
- Zago M, Uranues S, Chiarelli ME, Grandi S, Fumagalli LA, Tavola M, Chiarugi M, Mariani D, Wienerroither V, Kurihara H, Fingerhut A. Enhancing safety of laparoscopic surgery in COVID-19 era: clinical experience with low-cost filtration devices. *Eur J Trauma Emerg Surg.* 2020;46(4):731–5. <https://doi.org/10.1007/s00068-020-01413-1>.
- Yáñez Benítez C, Ribeiro MAF Jr, Alexandrino H, Koleda P, Baptista SF, Azfar M, Di Saverio S, Ponchiatti L, Güemes A, Blas JL, Mesquita C. International cooperation group of emergency surgery during the COVID-19 pandemic. *Eur J Trauma Emerg Surg.* 2020;13:1–9. <https://doi.org/10.1007/s00068-020-01521-y>.
- Rajput K, Sud A, Rees M, Rutka O. Epidemiology of trauma presentations to a major trauma centre in the North West of England during the COVID-19 level 4 lockdown. *Eur J Trauma Emerg Surg.* 2020;30:1–6. <https://doi.org/10.1007/s00068-020-01507-w>.
- Adiamah A, Thompson A, Lewis-Lloyd C, Dickson E, Blackburn L, Moody N, Gida S, La Valle A, Reilly JJ, Saunders J, Brooks A, ICON Trauma Study Group. The ICON Trauma Study: the impact of the COVID-19 lockdown on major trauma workload in the UK. *Eur J Trauma Emerg Surg.* 2021;9:1–9. <https://doi.org/10.1007/s00068-020-01593-w>.
- Surek A, Ferahman S, Gemici E, Dural AC, Donmez T, Karabulut M. Effects of COVID-19 pandemic on general surgical emergencies: are some emergencies really urgent? Level 1 trauma center experience. *Eur J Trauma Emerg Surg.* 2020;2:1–6. <https://doi.org/10.1007/s00068-020-01534-7>.
- Pinggera D, Klein B, Thomé C, et al. The influence of the COVID-19 pandemic on traumatic brain injuries in Tyrol: experiences from a state under lockdown. *Eur J Trauma Emerg Surg.* 2020. <https://doi.org/10.1007/s00068-020-01445-7>.
- Fessler J, Jacobsen T, Lauritzen JB, Jørgensen HL. Mortality among hip fracture patients infected with COVID-19 perioperatively. *Eur J Trauma Emerg Surg.* 2021;11:1–6. <https://doi.org/10.1007/s00068-021-01634-y>.
- Kreis CA, Ortmann B, Freistuehler M, Hartensuer R, Van Aken H, Raschke MJ, Schliemann B. Impact of the first COVID-19 shutdown on patient volumes and surgical procedures of a Level I trauma center. *Eur J Trauma Emerg Surg.* <https://doi.org/10.1007/s00068-021-01654-8>
- Kurihara H, Marrano E, Ceolin M, Chiara O, Faccincani R, Bisagni P, Fattori L, Zago M. Lombardy Emergency Surgery Group during Covid19 outbreak impact of lockdown on emergency general surgery during first 2020 COVID-19 outbreak. *Eur J Trauma Emerg Surg.* <https://doi.org/10.1007/s00068-021-01691-3>
- Martínez Caballero J, González González L, Rodríguez Cuéllar E, Ferrero Herrero E, Pérez Algar C, Vaello Jodra V, Pérez Díaz MD, Dziakova J, San Román Romanillos R, Di Martino M, de la Hoz Rodríguez Á, Galán Martín M, Sánchez López D, García Virosta M, de la Fuente Bartolomé M, Pardo de Lama MM, Gutiérrez Samaniego M, Díaz Pérez D, Alias Jiménez D, de Nicolás Navas L, Pérez Alegre JJ, García-Quijada García J, Guevara-Martínez J, Villadoniga A, Martínez Fernández R. Multicentre cohort study of acute cholecystitis management during the COVID-19 pandemic. *Eur J Trauma Emerg Surg.* 2021;19:1–10. <https://doi.org/10.1007/s00068-021-01631-1>.
- María FM, Lorena MR, María Luz FV, Cristina RV, Dolores PD, Fernando TF. Overall management of emergency general surgery patients during the surge of the COVID-19 pandemic: an analysis of procedures and outcomes from a teaching hospital at the worst hit area in Spain. *Eur J Trauma Emerg Surg.* 2021;5:1–10. <https://doi.org/10.1007/s00068-020-01558-z>.
- Rikken QGH, Mikdad S, Mota MTC, De Leeuw MA, Schober P, Schwarte LA, Giannakopoulos GF. Operational experience of the Dutch helicopter emergency medical services (HEMS) during the initial phase of the COVID-19 pandemic: jeopardy on the prehospital care system? *Eur J Trauma Emerg Surg.* 2021;12:1–9. <https://doi.org/10.1007/s00068-020-01569-w>.