

# Антикоагулянтная терапия при травме на фоне COVID-19: обоюдоострый меч

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**Ключевые слова:**

абдоминальная  
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На основании надежных данных установлена связь вируса SARS-CoV-2 с увеличением риска развития тромбоземболических осложнений, меньше сведений доступно в отношении лечения пациентов с COVID-19 и абдоминальной травмой.

**Материал и методы.** Представлен клинический случай пациентки 68 лет с тупой абдоминальной травмой в результате дорожного происшествия. На визуализирующем исследовании брюшной полости выявлено легкое кровотечение без повреждения солидных органов. Также у нее присутствовала отдышка, при дальнейшей оценке был выявлен COVID-19 умеренной степени тяжести. Пациентка получила консервативное лечение и с учетом COVID-19 начала терапию антикоагулянтами. На 4-й день пребывания в стационаре пациентка пожаловалась на внезапную боль в животе и вздутие живота с признаками перитонита. При компьютерной томографии с контрастированием брюшной полости и таза обнаружена большая забрюшинная гематома, сдавливающая правую почку спереди и правую толстую кишку сзади. Внутриоперационное обследование показало наличие большой забрюшинной гематомы, сдавливающей правую ободочную кишку, с гангреной задней стенки. Пациентке была выполнена правая гемиколэктомия с закрывающей илеостомией. В послеоперационном периоде у пациентки развилась раневая инфекция, с которой удалось справиться с помощью регулярных перевязок. При последующем наблюдении через 8 нед пациентке была выполнена реверсия илеостомы. Здесь представлен интересный случай возникновения забрюшинной гематомы на фоне антикоагулянтной терапии при COVID-19 у пациентки с абдоминальной травмой.

**Заключение.** Эксперты согласны во мнении о необходимости назначения пациентам с COVID-19 средней степени тяжести антикоагулянтной терапии для снижения риска развития тромбоземболических осложнений. Представленный клинический случай проливает свет на проблему нарушения гемостаза и повышенного риска кровотечений. Лечение COVID-19 на фоне травмы брюшной полости требует последовательного мониторинга и быстрого применения визуализирующих методов.

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## Anticoagulants in COVID-19 trauma: a double edge sword

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It is a well established fact how SARS-CoV-2 virus is associated with increased risk of thromboembolic events but less data is available about management of COVID-19 patients with abdominal trauma.

**Material and methods.** 68-year-old female presented with an alleged history of Road Traffic Accident with blunt abdominal injury. Imaging of the abdomen showed mild haemoperitoneum

with no solid organ injury. She also had breathlessness and on evaluation found to have moderate COVID-19. She was managed conservatively and started on anticoagulants in view of moderate COVID-19. On the 4th day of admission, the patient complained of sudden onset of pain in abdomen, abdominal distension with features of peritonitis. On imaging by CECT abdomen and pelvis showed large retroperitoneal hematoma compressing upon the right kidney anteriorly and right colon posteriorly. In view of peritonitis, the patient underwent exploratory laparotomy. Intra op finding showed large retroperitoneal hematoma compressing the right colon with posterior wall gangrene. Patient underwent a right hemicolectomy with covering ileostomy. Post op patient had a wound infection which was managed with regular dressings. On follow up patient underwent ileostomy reversal after 8 weeks. Herein, we present an intriguing case, where thromboprophylaxis in a COVID-19 infected patient with abdominal trauma led to retroperitoneal hematoma.

**Conclusion.** It is a general consensus that anticoagulant therapy must be recommended for prophylaxis in patients with moderate COVID-19 to reduce risk of thromboembolic events. Our case shines light upon the topic of hemostasis disturbance and increased risk of bleeding requiring serial monitoring and rapid imaging in co-management of COVID-19 with abdominal trauma.

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Abdominal trauma is still a cornerstone for surgeons due to being associated with possible complex organ injuries [1]. Retroperitoneal hematoma, one of the complications, is a serious condition for trauma patients because of the difficulty of diagnosis and treatment. Additionally, the COVID-19 pandemic has disrupted the usual flow of medical knowledge and management since clinicians are often faced with a dilemma in its co-management with other conditions. COVID-19 leads to increased risk for coagulopathy and thromboembolic events for which prophylactic thromboprophylaxis is started [2]. Clinicians must work towards individualisation of antithrombotic prophylaxis to delimit the risk of hemorrhagic events [3].

## Material and methods

68-year-old female presented with an alleged history of Road Traffic Accident with blunt abdominal injury. On evaluation vitals stable and abdominal examination was normal. Imaging of abdomen showed mild haemoperitoneum with no solid organ injury. She also had breathlessness and on evaluation found to have moderate COVID-19. She was managed conservatively and started on anticoagulants, antiplatelets and remdesivir in view of moderate COVID-19. Serial monitoring of haemoglobin and clinical monitoring of patient was done. On the 4th day of admission, the patient complained of sudden onset of pain abdomen, abdominal distension. On ex-

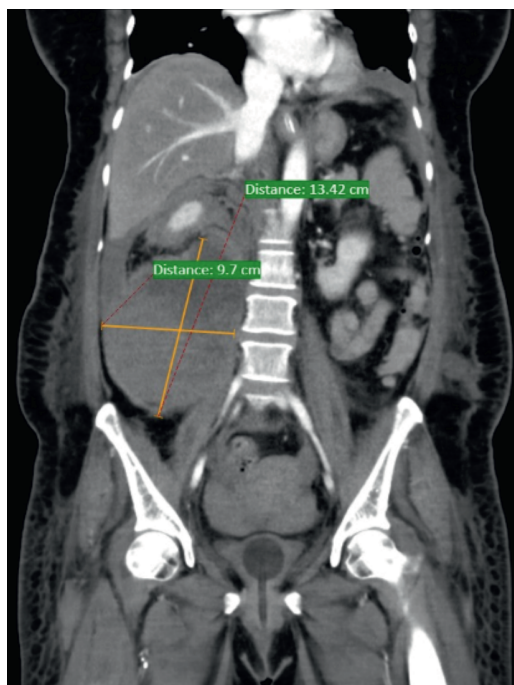
amination found to have vague right lower abdomen mass with features of peritonitis. On imaging by CECT abdomen and pelvis showed a large well defined non enhancing heterogenous density lesion in the right retroperitoneal compartment and right psoas muscle (see figure). These features confirmed retroperitoneal hematoma pushing the right kidney anteriorly and ascending colon laterally.

In view of peritonitis patient underwent exploratory laparotomy. Intra op finding showed large retroperitoneal haematoma pushing right colon anteriorly had lead to posterior wall gangrene of the right colon. Patient underwent right hemicolectomy with covering ileostomy. Post op patient had wound infection which was managed with regular dressings. On follow up patient underwent ileostomy reversal after 8 weeks.

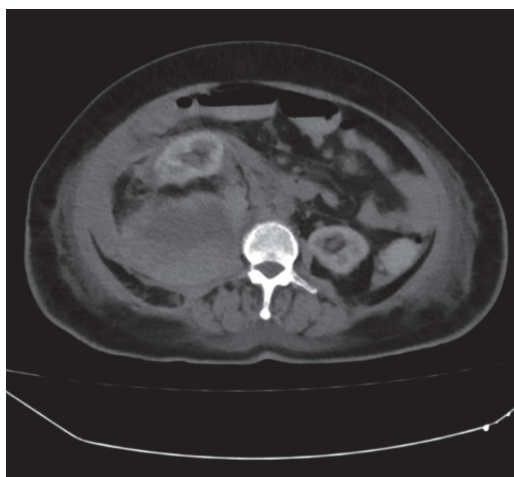
## Discussion

The most consistent hemostatic abnormality in SARS-CoV2 virus infected patients is increased prevalence of thromboembolic events. In a retrospective study by BMC [4], studying critically ill COVID-19 patients, there were notably more cases of thromboembolic events (40%) than hemorrhagic events (21%) seen during their ICU stay. In addition, most of the hemorrhagic events occurred in patients on full dose anticoagulation. The WHO guidelines recommend extended prophylaxis with LMWH or direct oral anticoagulants in COVID-19 patients to reduce risk of Deep

CECT abdomen (A) and pelvis (B): a large well defined non enhancing heterogenous density lesion in the right retroperitoneal compartment and right psoas muscle



A



B

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Vein Thrombosis and Pulmonary Embolism, at the cost of increase in bleeding events, including major bleeding. Extended prophylaxis (for up to 45 days) should also be considered for patients with elevated risk of Venous thromboembolism (e.g., reduced mobility, comorbidities such as active cancer, advanced age, and elevated D-dimer >2 times the upper limit of normal) who have low risk of bleeding. Numerous cases of abdominal wall hematoma are observed in association with LMWH use each year. Additional risk factors include old age, female, anticoagulant use and concomitant use of antiplatelet [5].

Our patient was an elderly female, evaluated for blunt abdominal trauma and as per her initial USG reports, was managed conservatively. However, both antiplatelet and anticoagulant were prescribed in view of moderate COVID-19, and this made her particularly susceptible to bleeding side effects. The dilemma was whether to continue these medications at an added expense of formation of retroperitoneal hematoma later. In a case report on formation of chest wall hematoma in COVID-19 patients, authors delved into two patients who had hemorrhagic presentations after resolution of chest wall pathology. They strongly recommended individualisation of antithrombotic prophylaxis regimes in patients affected with COVID-19 [6]. In a second study by Cristina Tudoran et al the patient developed sub-pectoral and calf hematoma leading to anemia and acute kidney injury during recovery from COVID-19. In this case, subcutaneous LMWH and anti-hypertensives were stopped, oral hydration and antibiotics were recommended along with local heparin gel and ice application [7].

## Conclusion

In COVID-19 patients with history of trauma use of anticoagulation and antiplatelets should be individualized. These patients on anticoagulation/antiplatelet should be kept under close observation.

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