COVID 19 - Management of Thrombotic Risk, VTE, Coagulopathy and DIC - Clinical Guideline

Reference No: CG-MED/3732/2021

This is practical guidance for use in the non-ICU, non-HDU wards. For those areas see specialty specific guidelines.

In keeping with all acutely ill medical patients, people with COVID-19 are at high risk of venous thromboembolism. All admissions should be risk assessed and receive thromboprophylaxis if indicated.

Higher than standard doses of thromboprophylaxis is appropriate for patients receiving advanced respiratory support, which is defined as:

1. Invasive mechanical ventilation
2. Bilevel positive airway pressure (BiPAP) via translaryngeal tube or tracheostomy
3. Continuous positive airway pressure (CPAP) via translaryngeal tube
4. Extracorporeal respiratory support
5. Patients who are proning.

VTE risk and thromboprophylaxis.

- All patients with COVID 19 pneumonia (or those with suspected COVID 19) should be risk assessed for their risk of venous thromboembolism and given thromboprophylaxis if the risk of thrombosis outweighs the risk of bleeding.
- Use the Trust VTE risk assessment on Lorenzo and give thromboprophylaxis as per existing Medical, Surgical, Orthopaedic and Obstetric guidelines **(**CG-T/2011/077a, CG-T/2011/077b, CG-ORTHOP/2016/001, OBS/04:18/T8)
- Start thromboprophylaxis as soon as possible and within 14 hours. Continue for the duration of the hospital stay or 7 days whichever is longer.
- Continue thromboprophylaxis for 30 days post-discharge in the following groups (a prophylactic DOAC may be used in this group);
    - Patients receiving advanced respiratory support (CPAP or high flow nasal oxygen or intubation) at any point during their inpatient stay **OR**
    - Patients with COVID pneumonia under respiratory medicine not in the group above but with at least one major risk factor (previous PE, malignancy, significantly reduced mobility).
- Pharmacological thromboprophylaxis can be given with a platelet count down to 30 x 10^9/L

- If the platelet count is less than 30 x 10^9/L, use mechanical measures.

6. For patients who are having advanced respiratory support

    - Consider increasing pharmacological thromboprophylaxis to an intermediate dose (e.g. instead of enoxaparin 40mg OD, increase to 40 mg BD, adjust as necessary for weight and renal function). Reduce to standard prophylactic doses from discharge.

Weight	**<50kg**	**50-99kg**	**100-150kg**	**>150kg**
Enoxaparin dose	40mg once daily	40mg twice daily	60mg twice daily	80mg twice daily
Renal impairement dosing (CrCl <30ml/min)	20mg once daily	40mg once daily	60mg once daily	80mg once daily

    - Reassess bleeding risk and VTE risk daily.

7. Management of VTE:

    - Have a low threshold for suspecting VTE
    - If VTE is confirmed treat with therapeutic enoxaparin (1mg/kg BD – adjust as necessary for renal function and platelet count) until the patient is stable or ready for discharge
    - When stable/ready for discharge change to a DOAC (or warfarin if a DOAC is contraindicated). Bear in mind DOAC/drug interactions (antivirals result in increased DOAC levels, experimental medications may also interact)

8. For patients on oral anticoagulation: maintaining a stable INR on warfarin or other VKA whilst unwell is difficult; antiviral agents significantly increase DOAC levels

    - For patients on a DOAC or Warfarin, consider changing to therapeutic enoxaparin (1mg/kg BD – adjust as necessary for renal function and platelet count).

9. COVID 19 associated coagulopathy

    - The commonest abnormalities seen are raised d dimers, **raised** fibrinogen and prolongation of the prothrombin time and APTT by several seconds.

- Mild thrombocytopenia (100 – 150 x 10^9/L) is seen in up to a third of COVID 19 patients
- Platelet counts below 100 are unusual (seen in 5% of hospitalized patients)
- The COVID coagulopathy described above is not DIC.
- Coagulopathy is not a contraindication to thromboprophylaxis or therapeutic anticoagulation provided there is no bleeding and the platelet count does not fall below 30 for thromboprophylaxis or 50 for therapeutic.
- Abnormal coagulation does not need correcting unless there is bleeding or an invasive procedure is necessary.

10. DIC

- Severely ill patients with COVID-19, especially those on ICU may develop frank DIC and meet the ISTH criteria for the diagnosis of DIC including a fall in fibrinogen (as opposed to the raised fibrinogen seen in Covid coagulopathy described in paragraph 4).
- Use the ISTH DIC score calculator if DIC is suspected: https://reference.medscape.com/calculator/649/dic-score
- Manage DIC as in non-COVID patients. The abnormal clotting does not need correcting unless there is bleeding or an invasive procedure is necessary.
- Tranexamic acid is contraindicated if DIC is confirmed.

References.

Practical guidance for the prevention of thrombosis and management of coagulopathy and disseminated intravascular coagulation of patients infected with COVID-19. Beverley Hunt, Andrew retter, Claire McClintock. ISTH Academy 25th March 2020.

Practical guidance for the management of adults with Immune Thrombocytopenia during the COVID-19 pandemic. Pavord S, Cooper N, Thachil J, Hunt B, Murphy M, Lowe G, Laffan M, Makris M, Newland A, Provan D, Grainger J, Hill Q.BJH. 16th April 2020

COVID-19 and VTE/Anticoagulation: Frequently Asked Questions (Version 2.1; last updated April 17, 2020) American Society for Haematology. Input from Drs. Lisa Baumann Kreuziger, Agnes Lee, David Garcia, Adam Cuker, Mary Cushman, Jean M. Connors

COVID-19 rapid guideline: reducing the risk of venous thromboembolism in over 16s with COVID-19: NICE guideline [NG186]Published date: 20 November 2020

Documentation Controls

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