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ABSTRACT N. PO77

THE CLINICAL AWARENESS OF MIXING TEST INTERPRETATION IN THE ERA OF COMPLEX REPORTING ALGORITHM: DO WE FORGET THE ORIGINS?.

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Background and Aims:
Plasma mixing test is a simple laboratory procedure, which is performed on samples from patients with coagulation screening tests prolonged (mainly the activated partial thromboplastin (APTT), but also the prothrombin time (PT) or both). The prolongation has to occur in the absence of an anticoagulant therapy (heparin, anti-vitamin K antagonists (AVK) or direct oral anticoagulants (DOACs)) or a previous diagnosis that explains it (positive lupus Anticoagulant, von Willebrand disease, haemophilia, liver disease).
Plasma mixing test allows to evaluate whether the 1:1 mixing with a normal pool plasma (NPP) corrects prolonged screening test, even after two hours of 37°C incubation. The principle on which this test is based is that a 50% level of a coagulation factor is sufficient to bring the altered test back to normal:
- if mixing sample corrects prolonged screening test, we hypothesize factorial deficiency
- on the contrary, if mixing sample does not correct, we hypothesize presence of specific or non-specific coagulation factor antibodies (2h 37°C incubation is fundamental to evaluate the presence of specific factor inhibitor).
Methods:
In the era of digitalization and automation of the post-analytic phase but also in the era of privatization of healthcare, the risk of forgetting the collection of all the patient's clinical-anamnestic information is always present. This causes the application of post-analytical complex algorithms of interpretation, resulting in time and resources lost.
From many years, we have established a process to request mixing test that always starts with a discussion between the laboratory and the clinician. So, with this oral communication we want to remember that plasma mixing test requires a simple and clear process to obtain satisfactory results.
Results and conclusion:
In our hospital, plasma mixing test is not requestable by hospital wards or by external patients because it is a laboratory instrument to frame the coagulation state of the patient. So, if the clinician find unexplained prolonged PT and/or APTT contacts the laboratory and discuss the case, also regarding patient physical examination (petechiae, hematomas).
Exclusion of anticoagulation therapy or specific clinical conditions, such as hepatotactic patients, is fundamental to proceed with a correct evaluation of mixing test results.
If we decide to proceed with the mixing test, laboratory request three 3,2% sodium citrate samples; samples are accompanied by a paper request form that include: indication of prolonged test, history of haemorrhagic or thrombotic pathologies, physical signs of haemorrhage or thrombosis and assumption of anticoagulant therapy.
With one of the three samples we perform plasma mixing test always also with 2h 37°C incubation and with the others two sample we always confirm mixing test results with second level coagulation tests.
For prolonged PT test, we perform extrinsic and common coagulation pathway while for prolonged APTT test, we perform intrinsic pathway, von Willebrand activity and antigen and LAC tests. Only, if the clinical examinations and mixing test are suggestive, we proceed with the study of the specific factor inhibitor.
In conclusion, with this simple workflow, plasma mixing test continues to have its diagnostic orientation functionality especially in emergency situations to exclude the presence of an acquired inhibitor that represent one of the haematological emergencies.

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