



Are Clinical Laboratories Following ISTH Recommendations for Lupus Anticoagulant Testing?  
*Results of a 2nd NASCOLA Questionnaire*

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Disclosure

Relevant Financial Relationship(s)  
 NONE

Off Label Usage  
 NONE

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Lupus Anticoagulant Testing

- Laboratory testing for the Lupus Anticoagulant (LA) is important in the diagnoses of
  - Thrombophilia
  - Suspected Antiphospholipid Syndrome (APS)
- 1st questionnaire was distributed to NASCOLA and ECAT members in 2005
  - Although valuable information was collected, questions were raised about compliance to specific ISTH recommendations
- NASCOLA membership were supportive of participating in a 2<sup>nd</sup> questionnaire to address these questions

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Goal of Second Questionnaire

- First questionnaire did not include specific questions about compliance to each of the ISTH recommendations for LA testing
  - Algorithms (provided on test procedures) had been used to indirectly assess compliance to each of the ISTH recommendations
- The goal of the Second Questionnaire was to ask direct and specific questions about compliance to each of the ISTH recommendations for LA testing

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ISTH SSC Recommendations

- Nine recommendations were offered in the 1995 SSC report on LA
  - Four of these became diagnostic criteria
  - One recommendation concerned nomenclature (retention of term "lupus anticoagulant")
- Remaining four recommendations dealt with:
  - Platelet count of platelet poor plasma (<math>10^9/L</math>)
  - Confirmatory assays
    - Use same assay principle as screening test that was initially found to be abnormal
  - Performance of routine clotting tests, such as PT and APTT
    - Use to evaluate possibility of other coagulation disorders that may interfere with LA methodology
    - If chosen method for screening or confirmation is known to be sensitive to heparin, a Thrombin Time may be helpful in detecting its presence
  - Solid phase assays for phospholipid antibodies should not be considered as a confirmatory procedure for LA activity

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ISTH SSC Criteria for Diagnosis of LA

1. Prolongation of at least one phospholipid-dependent clotting test
2. Evidence of inhibitory activity shown by the effect of patient plasma on pooled normal plasma
3. Evidence that the inhibitory activity is dependent on phospholipid
 

*This may be achieved by addition or alteration of phospholipid, hexagonal phase phospholipid, platelets, or platelet vesicles in the test system*
4. LAs must be carefully distinguished from other coagulopathies that may give similar laboratory results or may occur concurrently with LAs
 

*Specific factor assays and the clinical history may be helpful in differentiating LAs from these other possibilities*

Brandt JT. Thromb Haemost 1995;74:1185-90

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## Methods



- A patterns-of-practice questionnaire, containing 26 questions, was built on SurveyMonkey.com®
- Distributed in January 2007 to NASCOLA and ECAT members
  - NASCOLA : electronic data collection complete
    - High level of participation - 79% (49 of 62 labs)
  - ECAT : collection stage

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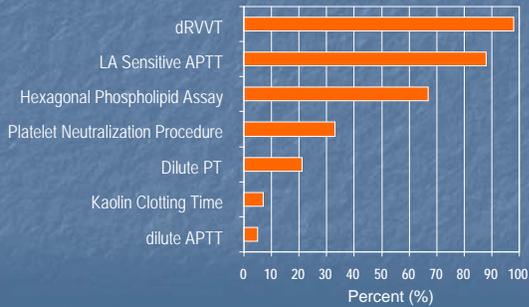
## NASCOLA Results



- Life and moving targets:
  - 19% changed practices since participating in the first survey
  - 26% changed reporting practices since participating in the first survey
  - 21% planned to change LA testing practices after participating in 2nd study
- How many follow all ISTH recommendation?
  - 87% reported that they did.....

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## LA Tests Commonly Used by NASCOLA Members

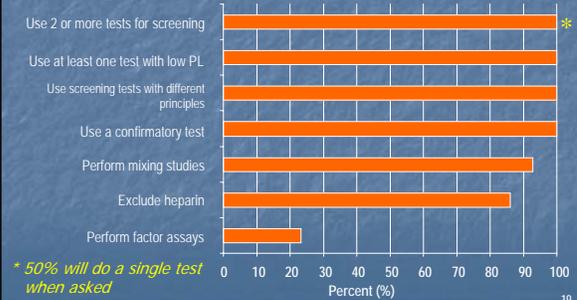


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## Analysis of NASCOLA Data



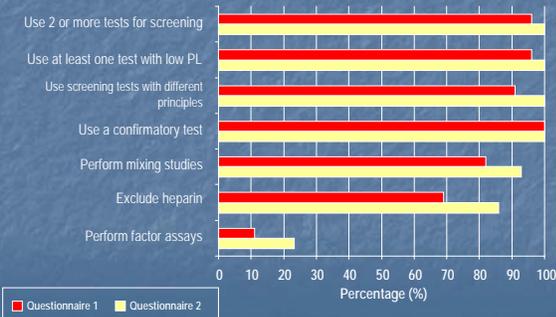
2<sup>nd</sup> Questionnaire Results from 49/62 (79%) NASCOLA Laboratories as to their Conformity to ISTH Recommendations & Criteria



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## Conformity to ISTH Recommendations?

Comparison of 2 NASCOLA LA Survey Responses



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## Mixing Studies



- 7% (3 of 42 labs) reported that they did not perform mixing studies to document an inhibitor effect on pooled normal plasma
- Of the laboratories that performed mixing studies:
  - Lupus sensitive APTT : 87%
  - dRVVT : 86%
  - KCT : 75% (only 4 laboratories)

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## Heparin Exclusion



- For the exclusion of heparin as the cause of the coagulopathy:
  - 14% of respondents (6 of 43 labs) did not exclude heparin as the cause of an abnormal LA result
- Of the laboratories that did exclude heparin:
  - 57% of respondents did not repeat the abnormal LA test with a neutralized sample

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## Factor Assays on LA samples?



- When questioned if factor assays are performed to exclude a coagulopathy
  - 30% of respondents reported that their LA test panel does not include testing for a factor deficiency or specific factor inhibitor
- Of the 30 laboratories that reported performing factor assays
  - 67% (n=20) only perform them when the additional testing is approved by a client

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## Revision of ISTH Recommendations?



- Do the ISTH recommendations need to be updated?
  - 32% of NASCOLA laboratories indicated in the affirmative
  - 17% identified that the following requirement needed to be changed: "factor assays should be performed whenever there is suspicion of a specific factor deficiency or inhibitor."

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## Conclusions



- The 2<sup>nd</sup> NASCOLA questionnaire on LA testing practices showed that the majority of NASCOLA laboratories follow most of the 1995 ISTH LA testing recommendations
- A significant number of laboratories do not investigate for other coagulopathies as the cause of an abnormal LA test result (e.g. test for heparin, factor deficiency or a specific inhibitor)
  - A majority of laboratories (58%) dealt with this issue by including an interpretative comment, suggesting that testing be done to evaluate other causes of abnormal result, if clinically indicated

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## Closing Comments Future Initiatives



- Our data also indicate that NASCOLA questionnaires have had an impact on the quality of laboratory testing for LA, assessed by compliance to ISTH testing recommendations
  - Questionnaires may help improve the quality of other coagulation tests, complementary to other initiatives, such as proficiency testing exercises
- It would be interesting to compare performance of the different LA test algorithms used in practice by proficiency testing exercises with different types of abnormal samples

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