Acute Lymphocytic Leukemia (ALL) Panel by FISH, Pediatric

Patient:
DOB: Age: Gender:
Patient Identifiers:
Visit Number (FIN):

Client:
Physician:

ARUP Test Code: 2002719
Collection Date: 11/30/2016
Received in lab: 12/02/2016
Completion Date: 12/03/2016

Interpretation

Specimen Received
Specimen Type: Bone marrow
Reason for Referral: Pediatric ALL Panel
Test Performed: FISH, P ALL

ABNORMAL FISH RESULTS
4cen (CEP4): gain present
21q22 (RUNX1): gain present

NORMAL FISH RESULTS
10cen (CEP10): gain not detected
t(9;22)(q34;q11.2) (ABL1;BCR): translocation not detected
11q23 (KMT2A; also known as MLL): rearrangement / deletion not detected
t(12;21)(p13;q22) (ETV6;RUNX1): translocation not detected
12p13 (ETV6): deletion not detected
21q22 (RUNX1): amplification not detected

DIAGNOSTIC IMPRESSION:
Fluorescence in situ hybridization (FISH) analysis was performed with chromosome 4 and 10 centromere probes, BCR/ABL1/ASS1 Tricolor, ETV6/RUNX1 (also known as TEL/AML1), and KMT2A (MLL) probes (Abbott Molecular). 200 interphase cells were scored for each probe combination.

This analysis showed evidence of:
- trisomy 4 in 17/200 (8.5 percent) cells scored,
- 3-4 signals were observed for the RUNX1 probe in 175/200 (87.5 percent) cells scored, consistent with additional copies of chromosome 21 (3 signals in 162 and 4 signals in 13 cells).

The decision to call the trisomy 4 result abnormal is based on our laboratory validation data for this probe that indicates >3.8 percent abnormal cells is considered a positive result. However, as the percentage of abnormal cells in this case is close to our cut-off value, correlation of this finding with other laboratory and clinical data is strongly recommended.

FISH analysis with the remaining probes showed normal results with no evidence of trisomy 10, t(9;22)(q34;q11.2) (BCR-ABL1 translocation), 11q23 deletion or rearrangement involving the KMT2A (MLL) locus, t(12;21)(p13;q22) (ETV6-RUNX1 translocation),

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12p13 deletion involving ETV6, or 21q22 amplification involving the RUNX1 locus.

Additional signals for chromosomes 4 and 21 suggests a hyperdiploid clonal population with gains of at least chromosomes 4 and 21. In the context of B-ALL, hyperdiploidy is associated with a favorable prognosis. Please correlate these results with clinical and other laboratory findings in this patient.

Reference:
Swerdlow SH, Campo E, Harris NL, Jaffe ES, Pileri SA, Stein H, Thiele J, Vardiman JW. (Eds.): WHO classification of Tumours of Haematopoietic and Lymphoid Tissues. IARC: Lyon 2008.

ISCN:
nuc ish(CEP4x3)[17/200],(CEP10x2)[200],
(ASS1x2,ABL1x2,BCRx2)[200],
(KMT2Ax2)[200],
(ETV6x2,RUNX1x3)[162/200],(ETV6x2,RUNX1x4)[13/200]

This result has been reviewed and approved by , Ph.D., FACMG
Electronic Signature

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement A: aruplab.com/CS

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