



DEPARTMENT OF PAEDIATRIC HAEMATOLOGY AND ONCOLOGY
বঙ্গবন্ধু শেখ মুজিব মেডিক্যাল বিশ্ববিদ্যালয়
Bangabandhu Sheikh Mujib Medical University

Shahbag, Dhaka-1000, Bangladesh



BONE MARROW REPORT



Bill No. : 1240018612 Lab ID : 22 Slide No. : 940/24 Bill Date : Jul 30, 2024 Report Date : Jul 30, 2024
Patient : NABIL Age : 4Y 23D Sex : Male Bed :
Ref. by : . BSMMU(DEPT. OF PAEDIATRIC HAEMATOLOGY & ONCOLOGY).
Smpl ID : 12425958 Nature of Specimen : ASPIRATE Test : Bone Marrow Report

Provisional Diagnosis

Gross Description (Romanowsky Stain)

Smear and Stain : Average
Spicule : Adequate
Overall Cellularity : Normocellular
Myeloid/Erythroid Ratio : Normal
Erythropoiesis : Normally Active
Erythropoiesis :
Granulopoiesis : Active & Orderly
Megakaryocytes : Present
Features of Dysplasia :
Others (Parasites etc...) :

Bone Marrow Differentials

Blast : <5%
Myeloblast
Lymphoblast
Erythroblast
Promyelocyte
Myelocyte
Metamyelocyte
Band/ Neutrophil
Mature Lymphocytes
NRBC
Others

Special Stains (If done)

Comments

Diagnosis : Bone Marrow in remission.

Advice

MD. SHAFIQR RAHMAN
Medical Technologist

Checked by


DR. MOMENA BEGUM

Assistant Professor

Dept of Paediatric Haematology & Oncology

maCÔRE

ALL Multiplex Panel



| | |
|---------------------------------|-----------------------------|
| Specimen Type | |
| Bone Marrow | |
| Specimen Collection Date & Time | Date & Time of Accessioning |
| 16/07/2024 00:00 | 18/07/2024 12:35 Hrs |

Case ID: _____
 Patient Name: Nabil
 Age/Sex: 04 Year 07 Months /Male
 Hospital Location: Dhaka, Bangladesh, Bangladesh
 Hospital Name: Axon Health Care
 Physician Name: Prof. Dr. Md. Anwarul Karim
 Date & Time of Reporting: 22/07/2024 15:26 Hrs

TEST NAME

ALL Multiplex Basic BCR-ABL, MLL-AF9, MLL-AF4, MLL-ENL, t(1;19) & t(12;21)

CLINICAL HISTORY

Not Provided

METHODOLOGY

Polymerase Chain Reaction

RESULTS

| CHROMOSOMAL ALTERATION | GENES COVERED | RESULTS |
|------------------------|-----------------------|--------------|
| t(1;19) (q23;p13) | TCF3-PBX1 (E2A-PBX1) | Not Detected |
| t(4;11)(q21;q23) | KMT2A-AFF1 (MLL-AF4) | Not Detected |
| t(9;11) (p21;q23) | KMT2A-MLLT3 (MLL-AF9) | Not Detected |
| t(9;22) (q34;q11) | BCR-ABL1 (Major) | Not Detected |
| t(9;22) (q34;q11) | BCR-ABL1 (Minor) | Not Detected |
| t(9;22) (q34;q11) | BCR-ABL1 (Micro) | Not Detected |
| t(11;19) (q23;p13.3) | KMT2A-MLLT1 (MLL-ENL) | Not Detected |
| t(12;21) (p13;q22) | ETV6-RUNX1 (TEL-AML1) | Not Detected |

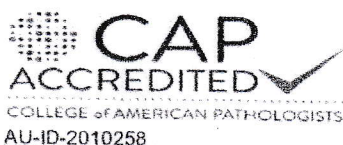
TEST ATTRIBUTES

- Qualitative analysis performed through Real Time PCR

Disclaimer: This test is performed using in-house developed assay for ALL Multiplex Panel. The assay is designed to perform the reactions at the specified analytical sensitivity given that the template DNA is not heavily fragmented and does not contain materials that could inhibit the amplification reaction.

TEST ATTRIBUTES

| LIST OF DETECTABLE VARIANTS AND LIMIT OF DETECTION | | |
|--|---------------------|--------------------------|
| COMPONENTS | VARIANT(S) DETECTED | LIMIT OF DETECTION (LOD) |
| | | |



Shivani

Dr. Shivani Sharma, DCP, DNB
 Reg. No. 1906

Rahul

Dr. Rahul Katara, Ph.D.

naCÔRE ALL Multiplex Panel



102240013208

| | |
|---------------------------------|-----------------------------|
| Specimen Type | |
| Bone Marrow | |
| Specimen Collection Date & Time | Date & Time of Accessioning |
| 16/07/2024 00:00 | 18/07/2024 12:35 Hrs |

Case ID: Nabil
 Patient Name: Nabil
 Age/Sex: 04 Year 07 Months /Male
 Hospital Location: Dhaka, Bangladesh, Bangladesh
 Hospital Name: Axon Health Care
 Physician Name: Prof. Dr. Md. Anwarul Karim
 Date & Time of Reporting: 22/07/2024 15:26 Hrs

| | | |
|-----------------------|----------------------------|-------------------------------|
| TCF3-PBX1 (E2A-PBX1) | - | 10 copies per reaction |
| KMT2A-AFF1 MLL-AF4) | e9-e4; e9-e5;e10-e4;e11-e4 | |
| KMT2A-MLLT3 (MLL-AF9) | e8-e9; e8-e10;e19-e6 | |
| BCR ABL1 | e13-a2;e14-a2;e1-a2;e19-a2 | |
| KMT2A-MLLT1 (MLL-ENL) | e9-e2;e9-e6;e10-e2 | |
| ETV6-RUNX1(TEL-AML1) | - | |

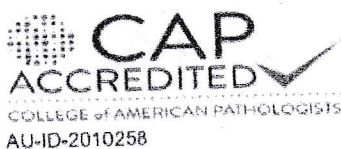
ADDITIONAL INFORMATION

- Precursor B-cell ALL accounts for 85% Acute leukemias in children and 20% in adults. Most patients with ALL show an abnormal clone by conventional cytogenetic studies.
- All translocations mentioned above are valuable prognostic markers.

| | |
|----------------------|---|
| TCF3-PBX1 (E2A-PBX1) | <ul style="list-style-type: none"> • Translocation (1;19)(q23;p13.3) is reported in 1-6% pediatric and 1-3% of adult ALL patients • The translocation may be balanced or unbalanced form • Most patients have pseudodiploid karyotypes, and almost all are diagnosed with pre-B ALL • Clinical outcome of patients with t(1;19)(q23;p13.3) is debatable with favorable to intermediate prognosis for pediatric and young adults patients, and favorable to adverse prognosis for adult patients |
| KMT2A-AFF1 (MLL-AF4) | <ul style="list-style-type: none"> • The t(4;11)(q21;q23) results in the KMT2A/AFF1 fusion gene and is the most frequent MLL translocation, reported in nearly 50% of diagnosed ALL cases • Reported in 1-2% pediatric with 55% in infants (<1 yr) and 4-9% of adults • Clinical outcome of patients with t(4;11)(q21;q23) is unfavourable with adverse prognosis in all age groups • KMT2A rearrangement is associated with poor cytogenetic risk in B-ALL |

COMMENTS

| | |
|-------------------------------|--|
| KMT2A/MLLT3 (MLL-AF9) | <ul style="list-style-type: none"> • KMT2A/MLLT3 is reported in 5-12% of pediatric and 1-2% of adult acute myeloid leukemia (AML) • It is the most frequent MLL rearrangement in childhood AML and is a rare event in ALL • Associated with poor to intermediate prognosis |
| BCR-ABL 1 (major/minor/micro) | <ul style="list-style-type: none"> • The incidence of BCR-ABL in Acute Lymphoblastic Leukemia (ALL) increases with age, from less than 5% in younger children to 20-30% in older adults, with a peak incidence in patients aged 35-50 years • p190 minor transcript of BCR-ABL1 has been reported in 50-70% adult and 90% pediatric Ph+ ALL • p210 major transcript of BCR-ABL1 is the second most abundant, reported in 15-30% Ph+ ALL • Presence of BCR-ABL1 gene rearrangement is associated with poor prognosis in ALL patients • Ph+ ALL are eligible for targeted TKI therapy |
| | <ul style="list-style-type: none"> • Chromosomal translocations involving 11q23 are frequent in infant acute leukemia and give rise to the |



Shivani
 Dr. Shivani Sharma, DCP, DNB
 Reg. No. 1906

Rahul
 Dr. Rahul Katara, Ph.D.

naCÔRE ALL Multiplex Panel



MC-2258

102240013208

| | |
|---------------------------------|-----------------------------|
| Specimen Type | |
| Bone Marrow | |
| Specimen Collection Date & Time | Date & Time of Accessioning |
| 16/07/2024 00:00 | 18/07/2024 12:35 Hrs |

Case ID
Patient Name
Age/Sex
Hospital Location
Hospital Name
Physician Name
Date & Time of Reporting

Nabil
04 Year 07 Months /Male
Dhaka, Bangladesh, Bangladesh
Axon Health Care
Prof. Dr. Md. Anwarul Karim
22/07/2024 15:26 Hrs

| | |
|--------------------------|--|
| KMT2A-MLLT1 (MLL-ENL) | <p>formation of MLL fusion genes</p> <ul style="list-style-type: none"> • Translocations involving Mixed lineage leukemia (MLL) gene are reported in two thirds of infantile ALL (60-70%) cases • Translocation t(11;19) (q23;p13.3) generates MLL-ENL fusion gene which is the second most commonly found MLL translocation in acute leukemias • Presence of MLL-ENL fusion gene has been associated with poor prognosis, especially in infant • However, there is evidence MLL-ENL, associated with good prognosis in both T-ALL and patients age 1 to 9 years • MLL-ENL may persist over prolonged period of time as minimal residual disease during therapy follow up |
| ETV6-RUNX1 (TEL-AML1) | <ul style="list-style-type: none"> • The reciprocal translocation t(12;21)(p13;q22), the most common structural genomic alteration in B-cell precursor acute lymphoblastic leukaemia in children, results in a chimeric transcription factor TEL-AML1 (ETV6-RUNX1) • t(12;21) is the most common structural translocation in childhood pre B-ALL with incidence of 25% and 0-4% in adult ALL • Detection of this fusion shows improved outcome in childhood ALL with intensive chemotherapy and prognosis is undetermined in adult patients |



Shivani

Dr. Shivani Sharma, DCP, DNB
Reg. No. 1906

Rahul

Dr. Rahul Katara, Ph.D.