**Table 1: Patient characteristics**

|  |  |
| --- | --- |
| Total Patients (n) | 150 (%) |
| Gender  Male  Female | 93  57 |
| Age (years)  Median (Range ) | 55.5 (2-87) |
| Age group  <40 years  40-60 years  >60 years | 27 (18%)  71 (47.3%)  52 (34.7 %) |
| Hemoglobin (g/dl)  Median (Range) | 6.9 (3-12) |
| Total Leukocyte counts/ TLC (x109/ l)  Median (Range) | 3.1 (1.1-45) |
| Platelet counts (x109/ l)  Median (Range) | 41.0 (5-558) |
| S. LDH levels (U/L)  Median (Range ) | 533 (195-5055) |
| WHO diagnosis  MDS-SLD  MDS-RS  MDS-MLD  MDS-MLD-RS  MDS-EB I  MDS-EB II  Refractory cytopenia of childhood  MDS with isolated del(5q) | 13 (8.6)  02 (1.3)  66 (44)  02 (1.3)  32 (21.3)  33 (22)  02 (1.3)  01 (0.7) |
| Ringed Sideroblasts  Present  Absent | 26 (17.3)  124 (82.7) |
| Karyotyping Available  Normal karyotype  Abnormal karyotype | **N = 86**  43 (50)  43 (50) |
| Cytogenetics group (R-IPSS)  Very good  Good  Intermediate  Poor  Very poor | **N = 86**  1(1.1)  49 (56.9)  10 (11.6)  12 (13.9)  14 (16.2) |
| R-IPSS prognostic risk stratification  Very Low  Low  Intermediate  High  Very High | **N = 86**  2 (2.3)  11(12.8)  25 (29)  27 (31.4)  21 (24.4) |

**Table 2: Cytogenetic profile of MDS patients in different sub groups**

|  |  |  |
| --- | --- | --- |
| MDS Subgroup  N=86 | Karyotype | No. of patients |
| MDS-SLD  N=9 | 46XX[20] | 1 |
| 46XY[20] | 2 |
| 41~47,XX,+2,-8,-9,-14,-15,+16,-17,+19,+22 [cp10] | 1 |
| 46,XY,del(20q) | 1 |
| 46,XY,t(2;4)(p25;q23) | 1 |
| 45,XX,-21 | 1 |
| 46,XX,del(11)(q23)[4]/46,XX[16] | 1 |
| 46,XY,t(1;5)(p22;q33),-8,t(9;22) (q34;q11.4), +22[15] | 1 |
| MDS-MLD  N=39 | 46 XY [20] | 12 |
| 46XX [20] | 6 |
| 46,XY,-5,del 7(q11.2),-13,+17,-18 | 1 |
| 46, XX, add (19)(q33.3) | 1 |
| 47,XY,+10,del(20)(q11.2)[04]/46,XY,del(20)(q11.2)[06] | 1 |
| 45,XX,-7 [20] | 4 |
| 45,XX,-7,inv(14)[20] | 1 |
| 46,XY,del)(3q)[08]/46,XY[12] | 1 |
| 46,XY,del(20q)(q12) | 1 |
| 44~46,XX,-18,-19[cp3]/46,XX[17] | 1 |
| 47,XY,+9 | 1 |
| 45,XY,-9[20] | 1 |
| 46,XY,del(5)(q11.2q13)[02]/46,XY[08] | 1 |
| 46,XY,del(5)(q22)[12] | 1 |
| 45,XY,-7[12]/46,XY,-7,+21[8] | 1 |
| 47XY, -7, +21, +22 [20] | 1 |
| 45,XX,-4,t(9;22)(q34;q11.2) | 1 |
| 45,XY,-7,del(20)(q12)[10]/45,XY,-7[10] | 1 |
| 45,XX,-7[15]; 46,XX,-7,+22[05] | 1 |
| 44~45/46,XY,-15,-16,-19,-20[cp08]/46,XY[12] | 1 |
| 46XX [20] | 1 |
| MDS-RS  N=1 | 46, XY[20] | 1 |
| MDS MLD-RS  N=2 | 45,XY,-9[20] | 1 |
| 46XY [20] | 1 |
| MDS -EB 1  N=18 | 46XY [20] | 6 |
| 46XX [20] | 4 |
| 47,XY,del(1)(p34),t(1;12)(p34;p11.2),der(5)add(5)(p15.1),t(5;7;9;)(q13;q32;p22),del(12)(p11.2),+14,+mar1,+mar2,+mar3 | 1 |
| Monosomy 5,9, 12,14,16,18,20,21 | 1 |
| 46,XX,del(20)(q12) | 1 |
| 45,XY,-7[06]/46,XY[14] | 1 |
| 41-43,XY,-7,-13,-16,-17,-18,-19,-20,-21,+mar1,+mar2 , [cp20] | 1 |
| 45XY, -9[08]; 46XY [02] | 1 |
| 42,XX,-9,-16,-17,-19,-21,-22 | 1 |
| 50,XY,+13,+19,+21,+21[20] | 1 |
| MDS-EB 2  N=15 | 46XX[20] | 4 |
| 46XY [20] | 2 |
| 43~48,XX,-1,+1,-5,-6,-7,-9,-10,-12,-13,-15,-17, +19,+20 ,+21, +mar1 ,+mar2 [cp20] | 1 |
| 45XY, -7[20] | 1 |
| 92<4n>,XXYY[02]/46,XY[18] | 1 |
| 44~45,XY,der(4),-5,der(7),-7,-8,t(9;22)(q34;q11.2),-15,+22 | 1 |
| 44~47,XY,t(1;2)(p36.1;q21),-2,-4,-5,-6,+13,+18,+mar | 1 |
| 47,XY, +8[20] | 1 |
| RCC  N=2 | 40 ~46,XY,-4,-5,-6,-7,-12,-20,-21,-22,+mar | 1 |
| 46XY [20] | 1 |

**Table 3: Age related IPSS-R**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Age (N) | Very high risk | High risk | Intermediate risk | Low risk | Very low risk |
| <40 yrs (20) | 7 (35%) | 7 (35%) | 5 (25%) | 1(5%) | - |
| 40-60 yrs (37) | 8 (21.6%) | 11 (29.7%) | 13 (35.1%) | 5 (13.5%) | - |
| > 60 yrs (29) | 6 (20.6%) | 9 (31.0%) | 7 (24.1%) | 5 (17.2%) | 2 (6.8%) |

**Table 4: Brief review of published Indian literature on MDS.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Author, Year** | **Study duration** | **No. of Patients** | **Mean Age years (range)** | **M:F** | **WHO/FAB subgroups (N)** | **Percentage patients with CG abnormalities** | **Common Cytogenetic Abnormality** |
| Varma N4 et al, 2008\* | Aug 1995-2007 | 35 | 15-80 | 2.18:1 | RA (11)  RARS (4)  RAEB (9)  RAEB-t(10) | 24/35 (68.57%) | Trisomy 8, followed by monsomy 5 and monosomy 7 |
| Vundinti BR5 et al, 2009 | Jan 2001-2006 | 160 | 44.3±2.6 (5 mo-75) | 2.07:1 | RA (55)  RARS(9)  RAEB (41)  RAEB-t(30)  CMML (10) | 79/145 (54.48%) \*\* | 19% patient’s detected to have deletions, followed by Monosomy/ trisomy/ translocations 12% each. |
| Shah NM6 et al, 2009 | April 1998- May2006 | 30 | 55  (8-73) | 1:1 | RA (9)  RCMD (2)  RAEB 1 (4)  RAEB 2 (7)  Prog to AML (1) | 3/11 (27.2%) | 25% patients had complex karyotype, rest had normal cytogenetics |
| Chaubey R7 et al, 2011 | Jan 2006-Dec 2007 | 40 | 41.57± 16.26 (14-75) | 1:1.2 | RA (15)  RARS (3)  RCMD (4)  RCM-RS (1)  RAEB 1 (7)  RAEB 2 (6)  5q- - 4 | 19/40 (47.5%) | Monosomy 7, most frequent (32%), followed by del 5q(21% and trisomy 8 (16%) |
| Rajenderan R8 et al, 2015 | July 2009-June 2015 | 26 | 56.7± 15.3 (25-80) | 1.2:1 | RCMD (6)  RAEB 1 (4)  RAEB 2 (6)  RCUD (5)  MDS-U (2)  5q- - 3 | 14/26 (53.8%) | 21.4% had complex abnormalities, 11.5% had del 5q, 65.4% in good prognostic subgroup |
| Gupta R et al, 2017 | June 2012 –Dec 2016 | 150 | 54.2  (2-87) | 1.6:1 | WHO diagnosis  MDS-SLD (13)  MDS-RS (2)  MDS-MLD (66) (44)  MDS-MLD-RS (2)  MDS-EB I (32)  MDS-EB II (33)  Refractory cytopenia **of** childhood (2)  5q- (1) | 43/86 (50%) | Complex karyotype most common abnormality 30% patients (13/43), chromosome 7 abnormalities (25.5%) |

\*\* 17% of these abnormalities were detected by FISH studies.