Algorithm for Myelodysplastic Syndrome (MDS)

MDS is one of the causes of cytopenias

**Criteria for Observation vs Urgent or Emergent referral**

- Observation: Peripheral Blood: (1) Cytopenia(s): Hb<100g/L; Platelets <100x10^9/L; ANC <1.8 x10^9/L AND (2) Bone Marrow (BM): Dysplasia: 10% or more in erythroid, myeloid or megakaryocytes OR Myeloblasts ≥5% (or ≥1% in blood) OR Cytogenetics MDS defining (by conventional karyotyping) (3) Exclude Reactive Causes of dysplasia
- Urgent or Emergent: Elderly (median age 70 years); Unexplained macrocytic anemia; Previous myelotoxic drugs, radiation. Even normal individuals may have dysplasia. Identification of dysplasia not always reproducible (i.e. inter-observer variation). Diagnosis of MDS should be made in a Hematology Centre.

**DIAGNOSIS:** Peripheral Blood: (1) Cytopenia(s): Hb<100g/L; Platelets <100x10^9/L; ANC <1.8 x10^9/L AND (2) Bone Marrow (BM): Dysplasia: 10% or more in erythroid, myeloid or megakaryocytes OR Myeloblasts ≥5% (or ≥1% in blood) OR Cytogenetics MDS defining (by conventional karyotyping) (3) Exclude Reactive Causes of dysplasia

**Risk Stratification according to Scoring Systems (IPSS / IPSS-R / WPSS / MPSS)**

**Lower Risk**
- (Mild cytopenias; Low blast counts; “Good” cytogenetics)
  - Asymptomatic
    - Watch and Monitor Every 3 months
  - Symptomatic Anemia
    - MDS del (5q)
      - S EPO: < 500mU/ml ± RBC Transfusion < 2/month
      - S EPO: ≥ 500mU/ml ± RBC Transfusion ≥ 2/month
      - Trial of ESA† ±G-CSF
      - Lenalidomde
  - Age <60
    - BM blasts <5%
      - Hypocellular BM
        - S EPO: < 500mU/ml ± RBC Transfusion < 2/month
        - Trial of ESA† ±G-CSF
        - Immunosuppressive therapy
        - Supportive Care at all stages: RBC transfusion, Platelet transfusion (for thrombocytopenia); Antibiotics for neutropenic infections, ?Fe chelation

**Higher Risk**
- (Severe cytopenias; High blast counts; “Poor” cytogenetics)
  - Age ≤ 65-70y
    - Good performance status
      - Donor available?
        - YES
          - BM blasts
            - ≥ 10% BM blasts
              - Azacitidine OR AML-like chemotherapy
              - Allogeneic Stem Cell Transplant (BMT) (only curative treatment)
          - NO
        - NO
          - Age > 65-70y
            - Or poor performance status
              - Not eligible for transplant
              - Azacitidine
  - Age > 65-70y
    - BM blasts
      - < 10% BM blasts
        - Allogeneic Stem Cell Transplant (BMT) (only curative treatment)

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1 Erythropoietic Stimulating Agents  † Erythropoietin

Pathways are subject to clinical judgment and actual practice patterns may not always follow the proposed steps in this pathway.