CLINICAL PROFILE OF FANCONI ANEMIA AND OUTCOMES WITH DIFFERENT CONDITIONING REGIMENS TO HEMATOPOIETIC STEM CELL TRANSPLANTATION IN NORTHEAST REFERENCE CENTERS

Matheus Patrick Gonçalves dos Santos[1], Márcio Handerson Benevides de Freitas[1], Maria Luiza Rocha da Rosa Borges[2],Terezinha de Jesus Marques-Salles[1]

1- Faculdade de medicina de Olinda, Pernambuco, Olinda, Brasil.
2- Centro de Hematologia e Hemoterapia do Ceará, Fortaleza,Brasil.

Fanconi anemia (FA) is a rare hereditary disorder marked by chromosomal instability from DNA repair defects. FA patients face heightened risks of hematologic malignancies and other cancers. Severe aplastic anemia leads to high morbidity and mortality due to infections and hemorrhages. Progression to myelodysplastic syndromes (MDS) or acute myeloid leukemia is common, with rare cases of lymphoid leukemias and solid tumors, including head and neck, anogenital, and oral cancers. FA shows marked clinical heterogeneity: about 60% of patients have congenital malformations affecting multiple systems (skeletal, integumentary, urogenital, cardiopulmonary, gastrointestinal, and CNS), while 20% show no distinct phenotype but present with pancytopenia and bone marrow hypoplasia/aplasia. In cases with subtle anomalies, diagnosis often occurs after bone marrow failure, typically between ages five and ten. Post-treatment complications include hemosiderosis from transfusions, virilization from prolonged androgen or corticosteroid use, and issues linked to hematopoietic stem cell transplantation (HSCT). Androgens may offer temporary benefit, but the only curative treatment is allogeneic HSCT, which shows better outcomes in patients with few transfusions and a matched sibling donor—though relapse occurs in ~40% of cases. This study aimed to retrospectively and cross-sectionally analyze medical records of nine FA patients treated at four institutions in northeastern Brazil, all having undergone HSCT at least one year prior. The cohort included five males and four females, aged 10–25. Frequent symptoms were short stature and petechiae (100%), café-au-lait spots (44%), and skeletal anomalies (33%). All had pancytopenia; diagnosis was confirmed via Mitomycin C assay due to limited access to the DEB test. All underwent allogeneic HSCT—one with a related donor, eight with unrelated. The main conditioning regimen was cyclophosphamide + antithymocyte globulin (44%), followed by fludarabine + cyclophosphamide + antilymphocytic globulin (33%), and fludarabine + cyclophosphamide + busulfan (23%). One year post-HSCT, significant hematological improvement was noted, especially in those on the first regimen: hemoglobin rose by 33%, leukocytes by 67%, and platelets from 42,000/mm^3 to 129,000/mm^3—surpassing literature-reported gains of 15–30%. Recent studies highlight the efficacy of regimens like FLU + CFA + GAL in improving hematological outcomes in FA patients.

KEYWORD: Fanconi Anemia, Allogeneic HSCT, hematopoietic stem cell transplantation