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A clinicopathological study of myelodysplastic syndromes in YGH

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The clinical and haematological studies of 36 cases of myelodysplastic syndromes (MDS), none of which had previously received chemotherapy or radiotherapy were studied. They were classified according to FAB classification. There were 19 males and 17 females in age ranging from 22 to 87 years. Among them, there were 24 cases of refractory anemia (RA), 4 cases in each of refractory anemia with excess blasts (RAEB), refractory anemia with excess blasts in transformation (RAEB-t) and chronic myelomonocytic leukaemia (CMML). Symptoms of anemia were present in 97.2%, infective manifestations in 55.6%, bleeding manifestations in 38.9%, hepatomegaly in 11.2%, splenomegaly in 8.4% and lymph-adenopathy in 5.6% of patients. Haematological findings showed that pancytopenia in 61.1%, combination of anemia and thrombocytopenia in 22.2%, combination of anemia and leucopenia in 11.1% and anemia only in 5.6% of MDS patients. In the bone marrow examination, hypercellularity in 27 cases, hypocellularity in 9 cases and dyshaemopoiesis involving two or more cell lines were seen in all cases.

INTRODUCTION

The term myelodysplastic syndromes was introduced in 1975 by a group of French, American, and British haematologists (FAB group) to describe a group of disorders with characteristic abnormalities of peripheral blood and bone marrow morphology and impaired bone marrow function, which tend to evolve into acute myeloid leukaemia (AML) [1]. MDS arises in two distinct settings: Idiopathic or primary MDS which, occurring mainly in patients over age 50, often develops insidiously and therapy related MDS (TR-MDS) or secondary MDS which is a complication of previous myelo-suppressive drug or radiation therapy, usually appears 2 to 8 years after exposure [2]. Although the patients present with infections, bleeding, bruising, progresssive fatigue, dyspnoea on exertion, many patients present without symptoms but with anemia, thrombocytopenia, leucopenia, or a combination of these findings on routine laboratory evaluation [3]. The MDS can be diagnosed only by a haematologist, primarily on the basis of characteristic full blood count indices, morphological abnormalities on the peripheral blood film, and characteristic bone marrow appearances [4]. The FAB classification has been widely used since 1982. It is useful in predicting rates of survival and transformation to AML. There are five subtypes of MDS in FAB classification [5] (Table 1).

This classification allows to set delineate prognosis and adequate stratification of the majority of patients with these subgroups. A precise diagnosis and the determination of prognostic indicators are central to the establishment of a treatment plan [3]. Treatment options in MDS are limited. In younger patients, allogeneic bone marrow transplantation offers some hope for reconstitution of normal haemopoiesis and long-term survival. Older patients with MDS are treated supportively with antibiotics and blood products transfusions. The median survival in primary MDS varies from 9 to 29 months, but some individuals in good

Table 1. FAB classification of MDS

Morphological subtype	Prevalence(%)	Peripheral blood	Bone marrow
Refractory anemia (RA)	12-43	Blasts <1%	Blasts <5%
Refractory anemia with ring sidero - blasts (RARS)	14-37	Blasts <1%	Blasts <5%; >15% of NRBC are ring sideroblasts
Refractory anemia with excess blasts (RAEB)	13-43	Blasts <5%	Blasts 5-19%
Refractory anemia with excess blasts in transformation (RAEB-t)	4-27	Blasts >5% or Auer rods present	Blasts 20-29% or Auer rods present
Chronic myelomonocytic leukaemia (CMML)	1-22	As any of above but with $>1x10^9$/L monocytes	As any of above with or without an increase in monocytes or promonocytes

prognostic groups may live for 5 years or more. Overall progression to AML occurs in 10-40% of individuals. The overall median survival of TR-MDS is only 4 to 8 months and progress rapidly to AML [2]. There have been a lot of international literature regarding MDS since many decades ago. MDS is not uncommon in Myanmar. However, there were a few studies on MDS in our country [6, 7, 8]. Therefore, this study was conducted with an aim to determine the clinical and haematological features of patients with MDS classified according to the FAB classification.

MATERIALS AND METHODS

This was a hospital-based descriptive study which was conducted at General Medical Wards and Department of Clinical Haematology, Yangon General Hospital from August 2003 to July 2004. Prior to the study, an approval from the institutional ethical committee, University of Medicine 1 was obtained. A total of 36 patients with MDS were included in this study. Careful history taking, clinical examination, evaluation of laboratory investigation and bone marrow aspiration were performed on each patient, and trephine biopsy was done in those patients with hypocellular MDS and recorded as in proforma.

RESULTS AND DISCUSSION

During the one-year study period, there were 36 newly diagnosed cases among hospitalized patients in General Medical Wards and Department of Clinical Haematology in YGH. The mean age ± SD was found to be 49.8 ± 16.4 (range 22-87 yrs). Generally, more than half of the patients (20 cases) were between 20-50 years. In the present study, affected age group was more common in younger rather than old age group. However, there was no apparent sex preponderance with a ratio of (male : female -1.1:1). Out of 36 cases, 24 cases (66.4%) were RA, and 4 cases (11.2%) each were RAEB, RAEB-t and CMML (Table 2).

Table 2. Distribution of MDS according to FAB classification

Morphological subtype	No. of patients
RA	24 (66.4%)
RAEB	4 (11.2%)
RAEB-t	4 (11.2%)
CMML	4 (11.2%)
Total	36

There was no case of RARS in the present study. Among 24 cases of RA, 5 cases were bilineage MDS, and 19 cases were trilineage MDS. There was no bilineage MDS in other types of MDS in this study.

On studying the clinical manifestations, 36 patients (100%) presented with symptoms of anemia, 20 patients (55.6%) presented with infective manifestations and 14 cases (38.9%) presented with bleeding manifestations. Hepatomegaly was seen in 11.2%, splenomegaly in 8.4% and lymphadenopathy in 5.6% (Table 3). Regarding the haematological manifestations, pancytopenia was present at the time of diagnosis in 61.1%, combination of anemia and thrombocytopenia in 22.2%, combination of anemia and leucopenia in 11.1% and anemia only in 5.6% (Table 4). In this study, bone marrow aspiration was done in all cases and trephine biopsy was done in only one case. Hypercellularity of bone marrow was seen

Table 3. Clinical manifestations in different types of MDS

Types	Anae-mia (%)	Infec-tion (%)	Bleed-ing (%)	Hepato megaly (%)	Spleno-megaly (%)	Lymph-adeno-pathy (%)	Total
RA	24 (100)	13 (54.2)	9 (37.5)	-	-	-	24
RAEB	4 (100)	3 (75)	-	1 (25)	-	-	4
RAEB-t	4 (100)	3 (75)	2 (50)	1 (25)	1 (25)	1 (25)	4
CMML	4 (100)	1 (25)	3 (75)	2 (50)	2 (50)	-	4
Total	36 (100)	20 (55.6)	14 (38.9)	4 (11.2)	3 (8.4)	1 (5.6)	36

Table 4. Haematological findings in different types of MDS

Types	Pancyto-penia	Anemia & thrombocytopenia	Anemia & leucopenia	Isolated anemia
RA	15	5	2	2
RAEB	2	-	2	-
RAEB-t	4	-	-	-
CMML	1	3	-	-
Total	22 (61.1%)	8 (22.2%)	4 (11.1%)	2 (5.6%)

in 27 patients (75%) and hypocellularity was seen in 9 patients (25%). Dyserythropoiesis was seen in 34 cases (94.4%), dysgranulopoiesis in 33 cases (91.7%) and dysmegakaryopoiesis in 33 cases (91.7%). In the present study, 86.1% of cases presented with trilineage MDS (dyserythropoiesis, dysgranulopoiesis and dysmegakaryopoiesis) and 13.9% of cases presented with bilineage MDS (dyserythropoiesis with dysgranulopoiesis or dysmegakaryopoiesis).

In conclusion, the present study described the clinicopathological findings of MDS in Myanmar according to FAB classification, based on the percentage of blast cells and ring sideroblasts in the bone marrow and presence or absence of a raised peripheral blood monocyte count [9]. It is a well-known fact that the most significant independent variables for determining outcome for both survival and AML evolution are marrow blast percentage, number of cytopenias, and cytogenetics [10]. Although cytogenetic study is compulsory, at present, it is inaccessible in our country. Therefore, cytogenetic analysis of MDS cases are recommended for further study in Myanmar. Besides, study on the natural course of MDS should be carried out in the future. However, it is expected that the present data obtained from this preliminary study might be valuable for clinicopathological field in our country.

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