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Short Article

New Model for the Assistance to Frail Patients with Hematological Disease

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Abstract

Haematological patients treated out-off hospital are more and more increasing due to use of new biological drugs. They have prolonged the patient survival and haematological disease prevalence. We do believe that an Internal Medicine ward where haematologists work together with hospitalists can improve quality of assistance and survival of frail haematological patients who need both Internal Medicine and Haematological competences. We report our experience in three years of such experimental assistance in agreement with Emergency Units and Haematological Department.

Keywords: *Haematological frail patients, Emergency Department, Internal Medicine Department*

Introduction

Due to appearance of new biological drugs. the prevalence of haematological patients is in continuous increasing. This epidemiological change is, at least partially, due to the efficacy of the new drugs "responsible" of more haematologic [1] cures and prolonged responses. According to this new scenario, when complications appear, the patients refers to family doctor or to hospital emergency departments [2,3]. News biological molecules can induce new side effects which, frequently, only haematologists are confident with. For this reason, we have implemented a network according to the town main Emergency Departments to admit frail haematological patients in our Internal Medical ward, where 4 internists cooperate with 2 hematologic specialists [4,5]. Since February 2022 to December 2024, 248 pts (116M, 132F), median age 76.4 yrs (range 30-98), were admitted to our ward, sent by Hematology or Emergency Departments of General Hospitals in Rome. The admittance procedure provided patient taken into our ward's care in 12-72 h since the invoiced request by the proposing hospital [6].

Patient Characteristics

During the study period, our bed manager received by mail 248 requests for admitting in our ward patients affected by hematologic disease, complications of hematologic therapy, appearance or worsening of comorbidity as diabetes, cardiac failure, second primary neoplasm, sepsis or other infections, hemorrhages, etc. Patient's characteristics are shown in Table 1. All admitted patients were assisted

Table 1: Main Characteristics of hematologic patients during period of observation 2022-2024.

Variables						
Gender, n (%)		**248** (100%)		**Medical Complication**		
	Male	116	47.8%	Infection	90	36,29%
	Female	132	53.2%	Heart Disease	30	12,10%
Median age, years (range)		76.4	(30-98)	Pain	13	5.24%
Median days hospitalization (range)		10	(1-38)	Blood Disorders	23	9.27%
Hematologic disease, n (%)				Diabetes	12	4,84%
	Multiple Myeloma (MM)	45	18,15%	Anemia	26	10,48%
	Chronic Lymphocytic Leukemia (CLL)	41	16,53%	Hemorragy	9	3,63%
	Myelodysplastic Syndrome (MDS)	43	17,34%	Orthopedics	8	3,23%
	Acute Leukemia (AL)	28	11,29%	Respiratory Disease	14	5,65%
	Non-Hodgkin Lymphoma (NHL)	32	12,90%	Electrolyte Imbalance	11	4,44%
	Myelofibrosis (MF)	8	3,23%	Kidney Disease	8	3,23%
	Myeloproliferative Neoplasm (MPN) Other Than MF	14	5,65%	Solid Neoplasm	3	1,21%
	Other	37	14,92%	Hepatic Disorders	1	0,40%

Table 2: Main Characteristics of hematologic patients with infections.

Variables						
Gender, n (%)		**90** (100%)				
	Male	51	56.67%	Median age, years (range)	77	(30-94)
	Female	39	43.33%	Median days hospitalization (range)	9	(2-38)
Type of Hematologic disease, n (%)				**Type of infection, n (%)**		
	MM	21	23,33%	pneumonia	49	54,44%
	CLL	12	13,33%	sepsis	10	11,11%
	MDS	17	18,89%	infection of urinary tract	12	13,33%
	AL	14	15,56%	infection of GI tract	6	6,67%
	NHL	12	13,33%	FUO	3	3,33%
	MF	7	7,77%	skin	5	5,56%
	Other	7	7,78%	other	5	5,56%

with appropriate therapies according to the specific complications or complaints (replacement or supportive therapy, antibiotics, hydration, etc.). The main reason for hospitalization were infections (36.3%) or cardio-vascular diseases (12.1%). Median time of hospitalization was 10 days (1-38). 196 out of 248 invoiced patients (80%) were referred back, cured or ameliorated, to their Hematological Center; 30 (21.1%) were sent to long-term or rehabilitation wards or others specialistic department; 9 pts (3.6%) were referred back to an emergency room for complications during hospitalization; 10 (4%) died in our ward and 3 (1.2%) were sent to the Palliative Cures. Infection was the principal reason of admission: 90 of them (36.3%) were admitted for this cause. Characteristics of patients with infections are reported in Table 2. The most frequent site of infection was lung or superior respiratory tract (54.4%). Sepsis with positive blood cultures were observed in 10 out of 90 pts (11.11%) and FUO in only 3 (3.3%). In all patients, antibiotic treatment lasted 5 days in lung infections or 7 days in case of sepsis, or 2 days after the disappearance of fever. In case of resistance of antibiotics, treatment was changed to alternative combination and/or following hemo-culture indications. Of all 90 pts 4 (1 Multiple Myeloma, 1 Chronic Lymphocytic Leukaemia, 1 Myelodysplastic Syndrome, 1 Acute Leukaemia) died, 6 were sent to the emergency room because complications that cannot be dealt with in our facility and lost at follow-up, 2 pts were sent to palliative care setting. The remaining 68 pts, after resolution of the acute complication, were referred, sometime after a follow-up visit after the discharge, to their reference haematologists for continuing specific treatment or follow-up.

Discussion and Conclusions

Proper assistance and cure of haematological patients with their disease or treatment complications have become a true emergency because more and more frail pts are treated in ambulatory or day hospital setting and because the ageing of population. A local network for their care and the admission of these patients in multiskilfull ward to face different occurring complications, in our opinion, is crucial in order to accelerate their reception and prompt treatments of conditions possibly fatal. This network is appreciated to local Emergency and Haematology departments according to the progressive increase in the years of the patients addressed to our institute. On the other hand, close collaboration between hematologists and specialists in other fields such as internal medicine, cardiology, neurology, orthopedics, infectious diseases, and pain management allows for a comprehensive assessment of the patient to guide the continuation of specific treatment for their condition. While it is not possible to reach the target for all patients, it can still facilitate the process and help the family navigate the natural progression of the disease when treatment cannot be proposed. We think that the presence of a similar network can ameliorate the assistance of haematological patients and can allow the Hematology departments to dedicate to intensive care life-saving procedures. Moreover, this organization is certainly cheaper as it avoids the occupation of specialist beds.

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