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Original Research Article

INFECTION MIMETIC TUMOR FEVER IN ALBANIAN ADULTS: EPIDEMIOLOGICAL AND NOSOGRAPHICAL DATA

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Abstract

Introduction: Tumoral pathologies are often presented as acute or prolonged febrile syndromes, with fever as the only dominant clinical pattern.

Material and Methods: 123 patients, during 2010-2015, age groups 20-70 years. This study is based on an epidemiological (gender, age group, and residence) and clinical survey (history, clinical, biological and serological data)

Results: Epidemiological Males were 79 cases and females 44 cases. Mean age was 45 yrs old, resident in town 82, countryside 41. Clinical A. *Tumors* Head and neck 9 (cerebral 7 ,thyroid 2) Thorax 11(pulmonar adenocarcinoma 8, breast 3) Digestive tract 49 (gastric cancer 4, colon 16,pancreas 15, liver 8, billiary tract 6) Lymphohemopoetic system 46 (leucosis 19 ,lymphoma 17, myeloma 8, Hairy Cell Leukemia 2) Urogenital tract 8 (renal cancer 2,prostatic 2, seminoma 1,ovarian 3) B F*ever profile and corresponding tumor* Continuous (cerebral 3, thyroid 2, pulmonar 6 ,colon 6,intestinal 1, pancreas 5, acute leucosis 8 , billiary tract 2, renal 1 ,seminoma1, breast 1) Remmitent (cerebral 2, colon 5, intestinal 2, pancreas 4, liver 2, billiary tract 2, acute leucosis 2, HCL 2, seminoma 1,breast 2) Intermmitent (cerebral 2, pulmonar 2, liver 6, billiary tract 2, pancreas 6 ,colon 5, renal 1) Recurrent (lymphoma 7, acute leucosis 2, myeloma 2) Ondulant (lymfoma 10, acute leucosis 3, myeloma 6)

Conclusion: We identified 17 types of febrile tumors and 5 different types of fever. Continuous fever dominated with 29.3% of cases. Diagnostic orientation to malignances followed a detailed anamnestic, laboratory and imagery screening.

Keywords: Fever, Profile, Tumor, Epidemiological, Clinical.

Introduction

Tumors actually represent a clinical entity, with a rising incidence and mortality. In the last 60 years, there have been many studies on the various causes of fever, as the definitions and patterns of disease have changed and serological and imaging tools are improved, establishing in this way the diagnose sooner.[1,2,3]

In everyday practice, they also represent a considerable number of misdiagnoses, mainly infectious nosologies. [4,5,6]

Considering that tumors and fever are already a solid clinical binomial, the febrile profile has become the most attractive part of tumoral pathologies.

Tumor fever is a diagnosis of exclusion because no clinical features are consistently present to distinguish it from other causes of fever. [7,8,9,10]

The most common malignancies associated with fever in our clinical practice include Hodgkin and non-Hodgkin lymphomas, acute leucosis, digestive tract cancers (mainly pancreatic and colon), followed by pulmonary cancer and renal cell carcinoma.[11,12]

The accompanying symptoms of tumor fever are rubor and diaphoresis, while chills and rigors are not present in these patients.

Laboratory tests are limited in their discriminatory properties between neoplastic and infectious fever in patients with cancer since, inflammatory conditions, infections, and cancer also can increase the erythrocyte sedimentation rate and the synthesis of C-reactive protein.[13,14]. The usefulness of biomarkers in febrile syndromes in patients with cancer is controversial, but there is evidence suggesting that procalcitonin can discriminate between different causes of fever.[15]

Fever is frequently seen in patients with cancer and can be associated with a variety of infectious and noninfectious causes. [16,17] To treat patients in a timely manner and to minimize morbidity and mortality, it is paramount that healthcare professionals determine the cause of the fever. Infections are a principal source of fever in patients with oncological disorders and should be initially considered in both neutropenic and non-neutropenic patients. [18]

Material

The study included 123 patients hospitalized at the Infectious Diseases Service of the University Hospital Center Mother Teresa in Tirana during a 5-year period from 2010 to 2015. The age group of the patients varied from 20 to 70 years, residents in town and countryside. Patients were hospitalized with the admission diagnosis FUO (Fever of unknown origin) and resulted as tumor pathologies.

Patients with attributes of specific patterns that could suggest for an infectious disease were excluded.

Method

The patients that participated were evaluated under the optic of:

- Epidemiological survey (gender, age group, and residence)
- Febrile profile identikit
- Corresponding tumoral pathology
- Infectious nosologies, which symptoms and clinical manifestation of tumors, resembled.

Results

The 123 patients participating in the study were observed aiming the rapid etiologic diagnosis. This demanded a careful assessment not only of clinical and laboratory data but also of epidemiological ones. 123 patients observed from January 2010 to December 2015 manifested 17 different type of tumors, which reflected in different subjects, different febrile profiles.

Epidemiological survey evidenced in terms of gender, residence and age group the following data: Males were 79 (64.2%) cases and females 44 (35.8%) cases. Mean age was 45 years old, resident in town 82 (66.6%) and countryside 41 (33.4%).

Clinical survey evidenced the nosologies and related clinical patterns:

A. *Topography/tumor* Head and neck 9 (7.31 %) (Cerebral tumor 7, thyroid 2) Thorax 11 (25.2%) (Pulmonary adenocarcinoma 8, breast 3) Gastrointestinal tract 49 (39.8%)

(Gastric cancer 4, colon 16, pancreas 15, liver 8, billiary tract 6) Blood 46 (37.3%) (Leucosis 19, lymphoma 17, myeloma 8, Hairy Cell Leukemia 2) Urogenital tract 8 (6.5%) (Renal cancer 2, prostatic 2, seminoma 1, ovarian3)

B.*Type of fever and corresponding tumor* Continuous (30%) (cerebral 3, thyroid 2, pulmonar 6 ,colon 6,intestinal 1, pancreas 5, acute leucosis 10 , billiary tract 2, renal 1 ,seminoma1, breast 1) Remmitent (19.5%) (cerebral 2, colon 5, intestinal 2, pancreas 4, liver 2, billiary tract 2, acute leucosis 2, HCL 2, seminoma 1,breast 2) Intermmitent (19.5%) (cerebral 2, pulmonar 2, liver 6, billiary tract 2, pancreas 6 ,colon 5, renal 1) Recurrent (8.94%) (lymphoma 7, acute leucosis 2, myeloma 2) Ondulant (17%) (lymfoma 10, acute leucosis 5, myeloma 6)

Table 1: Tumor pathologies distribution according to topography

Location of tumor	No. of cases	Type of tumor	No of Cases
Head and neck	9	Cerebral cancer Thyroid cancer	7 2
Thorax	11	Pulmonary adenocarcinoma Breast cancer	8 3
Gastrointestinal tract	49	Gastric cancer Colon cancer Pancreatic cancer Liver cancer Biliary tract cancer	4 16 15 8 6
Lympho hemopoietic system	46	Acute leucosis Lymphoma Myeloma Hairy cell leukemia	19 17 8 2
Urogenital Tract	8	Renal cancer Prostatic cancer Seminoma Ovarian	2 2 1 3

Table 2: Fever profile and corresponding tumor

Fever Profile	Tumors	
Continuos Fever	Cerebral	3
	Thyroid	2
	Pulmonary	6
	Colon	6
	Intestinal	1
	Pancreas	5
	Acute leucosis	10
	Billiary tract	2
	Renal	1
	Seminoma	1
	Breast	1

Remittent Fever	Cerebral	2
	Colon	5
	Intestinal	2
	Pancreas	4
	Liver	2
	Billiary tract	2
	Acute leucosis	2
	HCL	2
	Seminoma	1
	Breast	2
Intermittent Fever	Cerebral	2
	Pulmonary	2
	Liver	6
	Pancreas	6
	Billiary tract	2
	Colon	5
	Renal	1
Recurrent Fever	Lymphoma	7
	Acute leucosis	2
	Myeloma	2
Ondulant Fever	Lymphoma	10
	Acute leucosis	5
	Myeloma	6

Discussion

The above material proves that the fever syndrome is a phenomenon in clinical practice which is important in some plans.

Different authors have already defined fever as a frequent symptom in oncology patients [19]. A febrile syndrome in subjects with tumor pathology can be seen in several clinical phases:

- Fever can anticipate the signs and symptoms of a tumor pathology; it can be the only symptom, conditioning in this way different incorrect treatments mainly for infectious nosologies and late diagnose of tumor pathologies
- Fever in malignancies can be associated with various infections, especially opportunists, who need to be identified and treated timely and efficiently. It is believed that these infections, which may greatly affect the health of the patient, are even listed in their main lethality factors [20, 21]

These data are very important and should be considered by all clinicians and especially by infectologists or those who are involved in investigating febrile syndrome, especially FUO. The febrile tumors in our patients were localized in various organs and systems such as the nervous system, endocrine, respiratory, digestive tract, lymph-hematopoietic, urinary tract and genital tract. We identified 17 types of febrile tumors that were localized in different organs.[22]

This suggests that the spectrum of the diagnostic algorithm of fever and especially the FUO should include deep examinations of the above organs and systems, which makes it quite difficult and costly to practice.[23,24,25]

The profile of the febrile curves is also an interesting clinical pattern encountered in these patients. Table 2 identifies the presence of 5 different types of fever : continuous 30% of cases; 19.5% remittent; intermittent 19.5%; recurring 8.94% and undulant 17%.

Actually, the literature review does not evidence any specific data concerning the subtypes of fever profile which can be the very first symptom in malignancies.

Our service is the only, national center that is profiled in FUO investigation and triage, so the above data are of a great importance to our country. the analysis of the febrile profile shows some semiotic phenomena such as:

- The most common tumor fever encountered in our patients was the continuous, 30% of cases. The corresponding tumors of this fever profile were localized in 11 different sites of the body.
- The next ones were remittent and intermittent fever, 19.5% with respective tumors in 10 and 7 different anatomic locations.
- Ondulant fever was encountered in 17% of cases accompanied by malignancies of limfohemopoetic system and
- Recurrent fever which was the rarest febrile profile, but still correlated with 3 different tumor pathologies.

Despite the fact that the febrile profiles identified by us are not typical for specific tumor pathologies, they should be considered, since they are somewhat of an orientation value to the clinician. [26,27] This is in relation to the evidence of eventual tumors, as well as the rational use of imaging and biological research and tumor biomarkers. It is well-known to us that the diagnostic orientation to malignances follows a detailed anamnestic, laboratory and imagery screening which excludes important infectious disease in the first place. At the end of this study, we are convinced that the febrile profile is also an important diagnostic tool for a rapid diagnosis of malignancies. We think that the above data can help to rapidly eradicate the true diagnosis of cancer in tumor diseases, which have both initial and single febrile syndrome.

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