Scripta Scientifica Medica, vol. 35 (2003), pp 91-94

MEDITERRANEAN SPOTTED FEVER IN ADULTS AGED OVER 60 YEARS

M. Gospodinova, M. Nenova

Department of Infectious Diseases, Dermatovenereology, Epidemiology and Tropical Diseases, Prof. Paraskev Stoyanov Medical University of Varna

ABSTRACT

Nowadays the distribution and course of Mediterranean spotted fever is characterized by an increasing number of severe cases and its complications worldwide. Age-dependent changes and processes of ageing influence to a different extent upon the course of the infectious diseases. The authors examined the course of the Mediterranean spotted fever in adults aged over 60 years. The study covered 90 elderly patients treated in the First Clinic of Infectious Diseases at St. Marina University Hospital of Varna during the period from 2000 till 2003. Of them, 58 were females (64,4%) and 32 males (35,6%). Their hospital stay was 8,5 0,12 days long (p<0,05) while that of 30 control persons aged between 18 and 57 years was 7 0,32 days long. Clinical patterns and biochemical parameters were followed-up. The diagnosis was serologically confirmed in 28,8% of the patients. Some 79,2% of the elderly patients presented with accompanying diseases in contrast to 46,8% of the controls (p<0,001). Cardiovascular and cerebrovascular diseases occurred most commonly followed by chronic obstructive pulmonary disease, pneumopathies, diabetes mellitus, etc. One and the same patient often presented with several accompanying diseases. Contact with dogs was reported in 64,9% but tick biting - in 22% of the cases. The etiological treatment included tetracyclines and chlornitromycin or quinolones of third generation as an alternative. Pathogenetic and symptomatic therapy was also administered along with treatment of the accompanying diseases. The authors recommended the hospitalization of the elderly patients with Mediterranean spotted fever and the antibiotic therapy with chlornitromycin or quinolones of third generation of the severe forms. General practitioners' attention should be paid on the risk in such patients with delayed diagnosis and treatment.

Key words: Mediterranean spotted fever, diagnosis, clinical course, etiologic therapy, elderly patients

In Bulgaria, Mediterranean spotted fever presents with two waves. The first wave covers the period between 1948 and 1970. Next follow years when this disease disappears. However, in 1993 it appears again and the second wave continues until presence.

Nowadays the distribution and course of Mediterranean spotted fever is characterized by an increasing number of severe cases and its complications worldwide. Demographic studies and classifications consider the age of 60 years as a borderline of manifested physiological changes due to ageing and thus the beginning of the so-called third age. Elderly people represent a considerable demographic category in society. There exists a tendency towards a rapid ageing of the population in the new century in the whole world. Age peculiarities and ageing processes of human organism reflect to a different extent on the course of infectious diseases. That is why we decided to analyze the clinical course of the Mediterranean spotted fever in individuals aged over 60 years.

Address for correspondence:
M. Nenova, Dept. of Infectious Diseases, Prof. Paraskev Stoyanov Medical University of Varna, BG-9002 Varna, 55 Marin Drinov St., Bulgaria
E-mail: mnenova@abv.bg

MATERIAL AND METHODS

The study covered 90 elderly patients treated in the First Clinic of Infectious Diseases at St. Marina University Hospital of Varna during the period from 2000 till 2003. Of them, 58 were females (64,4%) and 32 males (35,6%). Their hospital stay was 8,5 0,12 days long (p<0,05) while that of 30 control persons aged between 18 and 57 years was 7 0,32 days long. Clinico-epidemiological and biochemical examinations were used. The diagnosis of the disease was based on them as well as on serological investigations.

RESULTS AND DISCUSSION

During the period from 2000 till 2003 a total of 336 patients with Mediterranean spotted fever were hospitalized in the First Clinic of Infectious Diseases. Of them, 90 or 26,78% were older than 60 years (Fig. 1). Sixty-one patients or 79,2% presented with accompanying diseases while only

14 control persons (46,7%) reported such diseases (p<0,001).

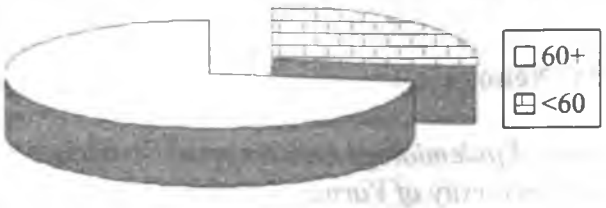

Fig. 1. Relative share of elderly patients with Mediterranean spotted fever

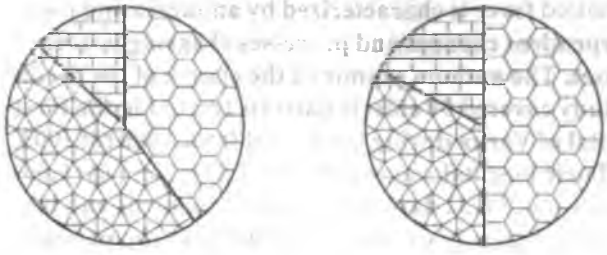

Fig. 2. Distribution of clinical forms according to their severity in elderly and younger patients with Mediterranean spotted fever

Most commonly, cardiovascular and cerebrovascular diseases occurred followed by chronic obstructive pulmonary disease, pneumopathies, diabetes mellitus, etc. Often, one and the same patient presented with several accompanying diseases (Table 1). Contact with dogs was reported in 50 patients aged over 60 years (64,9% of the cases) but tick biting - in 17 ones (in 22%). The epidemiological data were similar with the younger patients: 18 patients (60% of the cases) reported contact with dogs but 8 ones (26,6%) complained of tick biting. Table 2 demonstrates a fever (over 390C) with fit of shivering in 79,2% of the elderly patients but in 50% of the younger ones (p<0,05). A primary affect was established in 88,3% of the elderly patients and in 63,3% of the younger ones. Craniopharyngeal syndrome was present almost equally frequently in both groups - in 84,4% and in 73,3% of the cases (Table 2).

Most commonly, rush syndrome presented with a maculous-papulous eruption in both groups (in 96,1% and 93,3% of the cases, respectively) being generalized and involving both palms and feet (Table 2). Eighty-one elderly patients (89,9% of the cases) presented with a severe and a medium-severe form of the Mediterranean spotted fever.

Consciousness alterations were observed in 13 elderly patients three of whom were in coma during the first days. One patient had seizures but two patients had pareses. Four elderly patients developed symptoms of meningeal and radicular irritation. Disorders of the renal function were established in 31 elderly patients (in 40,2% of the cases). In 11 patients they were of a slight degree while in 20 patients they were of a severe degree. Concerning the control patients, two had changes of consciousness, three had pareses and manifestations of meningeal radicular irritation each. The kidney function was affected to a slight degree in three younger patients only (in 10% of the cases).

Both leukocytosis and thrombocytopenia were found out in the elderly patients with a more severe clinical form of the disease (Table 2). Table 3 gives an idea about the state at patient's discharge from hospital. The improved patients prevailed followed by the healed ones. Four elderly patients deceased. All of them had been hospitalized 10 and more days after the onset of the disease. Their out-patient etiological treatment was inadequate. Besides all of them had some accompanying diseases.

In 35 elderly patients (in 45,4% of the cases) an antibiotic therapy administered by the general practitioner had started at home. Thirty-one patients were given Ospamox, Ospexin, Duracef, etc. and only four patients were treated with Doxycyclin. The treatment was initialized at home in 53,3% of the younger patients as Doxycyclin was used in 6 of them only.

During the hospitalization, 74 elderly patients were administered etiological therapy with Doxycyclin, 10 ones with Ciprinol and 6 ones with Chlorocid - the latter were the patients with consciousness disturbances and severe clinical

Table 1. Accompanying diseases in elderly patients with Mediterranean spotted fever

Accompanying diseases	Elderly patients		Younger patients	
	n	%	n	%
Cardiovascular diseases	48	78,6	6	43,2
Cerebrovascular diseases	16	26,2	1	7,14
Chronic obstructive pulmonary disease and pneumopathies	11	18,0	4	28,5
Kidney diseases	4	6,5	2	14,3
Diabetes mellitus	9	14,7	2	14,3
Gastrointestinal diseases	8	13,1	3	21,6
Neoplastic processes	2	3,2	0	0

forms as the peroral antibiotic treatment was impossible.Twenty-seven younger patients were treated with Doxycyclin, two ones with Ciprinol and one patient with Chlorocid. Parallelly, in all the hospitalized patients a pathogenetical treatment was carried out such as disintoxication fluid therapy; in brain oedema - Mannitol, Furanthril, Dexamethason, and 20%-solution of human albumin; in hemorrhagic diathesis - blood and plasma substitution, styptic means; in disturbed renal function - stimulation of diuresis; in heart failure - cardiotonics as well as liver protecting means, vitamins, etc. A symptomatic therapy as well as treatment of the accompanying diseases was performed, too.

Table 2. Primary symptoms in patients with Mediterranean spotted fever

Symptoms	Elderly patients		Younger patients		t	p
	n	%	n	%		
Fever						
- up to 380C	19	20,7	15	50	2,8	<0,05
- over 390C	71	79,2	15	50	2,8	<0,05
- until day three	28	32,4	12	40	0,73	>0,05
- until day five	29	32,4 (?)	12	40	0,73	>0,05
- until day seven	20	22,0	3	10	1,66	>0,05
- until and after day ten	13	12,9	3	10	0,44	>0,05
Primary affect	79	88,3	19	63,3	2,63	<0,05
Craniofacial syndrome	76	84,4	22	73,3	1,2	>0,05
Eruption						
- papula	3	3,8	2	6,6	0,47	>0,05
- maculous-papulous	87	96,1	28	93,3	0,57	>0,05
- abundant	79	88,3	19	63,3	2,63	<0,05
- scanty	11	11,6	11	36,6	1,94	<0,05
Leukocytosis	12	15,5	6	20	0,54	>0,05
Thrombocytopenia	28	36,3	7	23,3	1,38	>0,05

Table 3. Patient's status at discharge from hospital

Patient's groups	healthy	with improvement	with worsening	without any change
Elderly (n=90)	13	72	4	1
Younger (n=30)	5	22	3	0

The Mediterranean spotted fever was first described by A. Conor and A. Bruch in Tunisia (cited after 1). In 1925 D. Olmer detected the disease in Marseil for the second time. In 1932 J. Caminopetros discovered the causative factor, *Rickettsia conori*. The role of canine tick as a natural reservoir of the infection and the importance of the 'canine factor' and the transovarial transmission of tick infectivity to the progeny etc. was clarified. In Bulgaria, the disease was first described by Prof. Vaptsarov in 1948 (cited after 1). The disease begins suddenly with a toxic and infectious syndrome, shivering, high temperature, adynamia, articular and muscular pains. Similarly to other transmissive infections, there is a craniopharyngeal syndrome along with bradycardia, hypotension, and moderate hepatosplenomegaly. On the third-fourth day a typical, maculous-papulous or papulous eruption emerges. This eruption is generalized - on the body, head, extremities, on palms and feet inclusive. At the place of tick biting a so-called dark spot ('tache noire') can be observed that can

be absent in 30% of the cases. The clinical form of the disease can be slight, medium severe or severe. Encephalitis, facial nerve neuritis, and serous meningitis are described as complications. Bronchopneumonia, myocarditis and phlebitis are also possible. Elderly patients with Mediterranean spotted fever prevailed among the hospitalized contingent in the region of Varna as previously reported by us for the period from 1994 till 2000 (1,2). Severe forms amounted to 43,3% but medium severe ones to 46,6% of the elderly patients. Some multiorgan damages such as renal failure, meningitis and meningoencephalitis, thrombocytopenia, hepatitis, etc. were established among the patients with severe forms of the disease. In most regions of Bulgaria, however, medium severe forms prevail (1,3-7). The multiorgan damages occur most often in elderly patients along with a manifested and longer-lasting toxic and infectious syndrome and a typical, maculous-papulous or papulous, most commonly generalized, eruption (Table 2). Pulmonary alterations such as bronchitis, pneumonia, lesions of the cardiovascular system, hepatitis, manifestations of a hemorrhagic diathesis, consciousness alterations, brain oedema, symptoms of meningeal radicular irritation were observed. The disturbances of the kidney function are reliably more common, too.

The course of the infectious process is defined by the interaction between both organisms - of rickettsia and adult microorganism. The ageing process leads to reduction of the adaptation capacities, to a physiological deficiency and changed homeostatic mechanisms that predispose the elderly people to dysfunction. If the presence of accompanying diseases is added the organism of the these people becomes particularly susceptible to the multiorgan damages emerging with the Mediterranean spotted fever. The altered reactivity, the presence of accompanying diseases in the individuals aged over 60 years, the delayed diagnosis, the inadequate out-patient etiological treatment despite the gained 10-year experience determine the more severe course and the more frequent complications. A serological proof was achieved in 28,8% of the cases. It allows us to suppose that along with Rickettsia conori considered the causative agent of the Mediterranean spotted fever for the region of the Balkan peninsula (1,4) there are some other circulating rickettsiae such as Rickettsia sibirica, Rickettsia rickettsii, etc. Tetracycline preparations are the traditionally administered etiological therapy of rickettsioses. Our experience shows, that chlornitromycin or quinolones of third generation can be used as an alternative when a parenteral application is required.

Based on the present study the following conclusions can be drawn:

1. Hospital stay of elderly patients is reliably longer.
2. Severe and medium severe forms prevail in the patients aged over 60 years (in43,3% and 46,6% of the cases, respectively).
3. There are accompanying diseases in 79,2% of the elderly patients.
4. Chlornitromycin or quinolones of third generation used as an alterantive etiological therapy in elderly patients contribute to a favourable outcome.

The following recommendation could be suggested:

1. The patients with Mediterranean spotted fever aged over 60 years should be hospitalized.
2. Etiological therapy should be administered as, alternatively, chlornitromycin or quinolones of third generation can be used in the severe forms requiring parenteral drug application.
3. General practitioners' attention should be directed to the risks in the elderly patients with delayed diagnosis and treatment.

REFERENCES

1. Александров, Е., Б. Камарийчев, Д. Александрова и.др., Марсилската треска в България - състояние и проблеми.- *Инфектология*, 2001, № 4, 16-23.
2. Николова, Д., П. Манолов, М. Господинова и съавт. Марсилска треска във Варненски регион за периода 1994-2000 г.- В: Конгрес по инфекциозни, паразитни болести и епидемиология. Стара Загора, 2001. Резюмета, с. 42.
3. Пишмишева, М. и. съавт., Марсилска треска в Пазарджишка област, *Инфектология*, 1998, № 1, 12-15.
4. Сербезов, В. Д. Шишманов, Е. Александров, и др., Рикетсиозите в България и другите балкански страни. Пловдив, Хр. Г. Данов, 1973, 173-210.
5. Тонев, Л. и др., In: Ninth Congress of the Bulgarian Microbiologists. Vol. 2., Applied Microbiology & Virology. Proceedings. Sofia, 1998, 577-580.
6. Beati, L., D.Raoult.-In: Rickettsiae and Rickettsial Diseases. Bratislava, VEDA, 1996, 134-178.
7. Gancheva, T., M. Nenova. Mediterranean spotted fever - an emerging infection for Varna region of Bulgaria. - In:I. Congr. ESEI. Budapest, 13-16. XI. 1998. Abstracts, p. 76.