

## Newborns from the series of necropolis n 2, zlatna livada – possible premature delivery cases

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Anthropological material from necropolis N 2, Zlatna livada, XI-XII c. (119 complexes with 126 individuals) is investigated. In age-sex distribution is registered highest portion of infants in the age group Infans I (74.9 %), in which in first age group 0-4.9 years are recognized 88 individuals (70.97 %). Individuals at interval 0-1 years, with 60 skeletons, are the highest number in age interval 0-1 year. From them are ascertained 34 skeletons of newborns (56.67 %), aged less than one month. In these individuals is found a predominance of those, who show underdevelopment (measurements lower than means for tenth lunar gestation month).

*Key words:* Zlatna livada N 2, XI-XII c. AD, newborns

Evidence basis for reconstruction of mortality in past populations – skeletal remains from archaeological sites, has been debated for many years in relation to its representativeness [1]. High influence of burial ritual on the age-sex distribution of individuals in skeletal populations is emphasized pointing to its discriminative action to different age and sex groups in the population. Most influenced by burial ritual appears group of newborns and small children, at one side by restriction of such burials in regular necropolises, and from other side by less cautious manipulation of their remains, as preparation of grave construction and grave depth, which exposes skeletal remains to higher possibility of destruction by environmental conditions. Specifics of these skeletons, being with very small dimensions and lower calcification, also have negative influence to their representation in archeological complex.

### Material and Methods

Necropolis N 2 in vicinity of the village of Zlatna livada, is fully investigated, dated in XI-XII c. AD. It appears as a part of a vast complex of settlement and other two necropolises, which developed from IX-X c. AD and represents a long surviving rural population, which inhabited the place [14, 15, 16]. Necropolis N 2 presents 119 complexes, in which are identified 126 individuals.

The anthropological investigation included all available material from skeleton after following methods in age-sex identification: dental development [8, 13], epiphyseal

Table 1. Age and sex distribution of identified individuals

	Infans I	Infans II	Juvenis	Adultus		Maturus		Senilis		Total
				M	F	M	F	M	F	
N	94	5	0	7	6	8	3	3	0	126
%	74.60	3.97	0	5.56	4.76	6.35	2.38	2.38	0	

Table 2. Age specific values of paleodemographic parameters\*

	$D_{(x)}$	$d_{(x)}$	$l_{(x)}$	$q_{(x)}$	$e_{(x)}$	$a_{(x)}$		$D_{(x)}$	$d_{(x)}$	$l_{(x)}$	$q_{(x)}$	$e_{(x)}$	$a_{(x)}$
0-4.9	88	70,97	100,00	0,71	11,29	13,79	40-44.9	3,75	3,02	11,29	0,27	13,39	55,89
5-9.9	9	7,26	29,03	0,25	27,78	35,28	45-49.9	2,75	2,22	8,27	0,27	12,38	59,88
10-14.9	1	0,81	21,77	0,04	31,20	43,70	50-54.9	2,25	1,81	6,05	0,30	11,00	63,50
15-19.9	0	0,00	20,97	0,00	27,31	44,81	55-59.9	2,25	1,81	4,23	0,43	9,64	67,14
20-24.9	4,75	3,83	20,97	0,18	22,31	44,81	60-64.9	1,5	1,21	2,42	0,50	10,00	72,50
25-29.9	1,75	1,41	17,14	0,08	21,74	49,24	65-69.9	0,5	0,40	1,21	0,33	12,50	80,00
30-34.9	1,75	1,41	15,73	0,09	18,46	50,96	70-74.9	0	0,00	0,81	0,00	12,50	85,00
35-39.9	3,75	3,02	14,31	0,21	15,04	52,54	75-79.9	0	0,00	0,81	0,00	7,50	85,00
							80+	1	0,81	0,81	1,00	2,50	85,00

\*mean values for adults with wider age determination

fusion [7], long bones lengths [2, 6]; identification of newborns [3]; pubic symphyseal surface relief after Todd [7], auricular surfaces relief [5]; cranial sutures obliteration [5, 10]; complex of sexual dimorphism [1, 10], cranial bones markers [7], standard tables for diameters of femoral, humeral and radial heads, femoral and humeral bicondylar breadth and clavicle length [2, 4, 11]. Results are processed after methods of paleodemography [1].

## Results and Discussion

In the studied skeletal population is registered the highest portion of infants in the age group *Infans I* with 74.9 % (Table 1). In them are recognized 88 individuals (70.97 %) in first age group of 0-4.9 years (Table 2). The portion of individuals of first age interval influences in very negative way life expectancy in population at this age. Distribution of individuals in this age interval shows highest number of individuals at 0-1 years at death, with 60 skeletons, 64.52 %, from which are found 34 skeletons of newborns, aged less than 1 month, or 56.67 % (Fig. 1). In these individuals is ascertained a predominance of those, who show underdevelopment (measurements lower than means, characteristic for newborns at tenth lunar gestation month) or 61.76 %. Mean values of lengths of long bones from these skeletons fall in-between values, characteristic for 7.5 to 9.5 lunar months of gestation.

As a result, series from Zlatna livada, N 2, presents values of relative number of dead in the age 0-4.9 years of 70.97 %, much higher than mean values found in populations from XI-XII c. AD of 24.38 %, surpassing also values, found for series from near territories in the period. It appears as a unique middle aged complex in Bulgaria, which contains big portion of newborns at development under tenth gestational month.

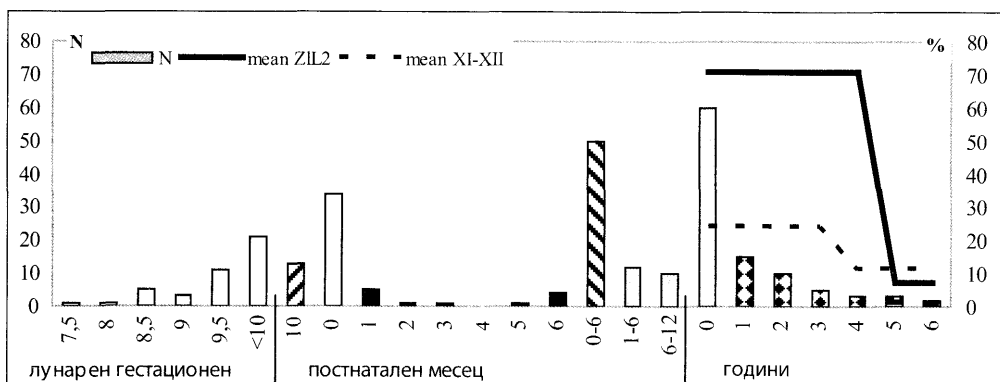


Fig. 1. Age distribution of individuals at the age 0-6 years at death

## Conclusions

High number of newborns in the series, which exceed known values from all skeletal populations from regular middle aged necropolises from Bulgaria, could point to a period of specific use of the site for burials of newborns, most of them dead during, or after premature births. To similar interpretation leads also excavated grave of female with fetus in birth position, buried after possible death during birth. The site gives unique information about mortality of newborns and cases of premature delivery, after which survival in the period was extremely reduced. From cultural point of view – the age distribution could be a result of attention, given to the newborns, even ones with underdevelopment, for which other burial sites were possibly restricted.

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