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Orofacial clefts with associated anomalies in Lithuania

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The aim of the study was to investigate the incidence and type of orofacial clefts associated with congenital defects in a well-defined Lithuanian population. These data are weighty for the further international population-based investigations.

Patients and methods. Material of the study comprised 235 cases with orofacial clefts and one or more major congenital anomalies, 1993 through 2005, obtained from the Centre for Medical Genetics at Vilnius University Hospital Santariškių Klinikos, Clinic of Maxillo-facial and Oral Surgery, Institute of Odontology of Vilnius University, the Lithuanian Registry of Congenital Anomalies (LIRECA) and the National Pathology Centre at the Ministry of Health of the Republic of Lithuania. Orofacial clefts were subdivided into three groups: cleft palate alone, cleft lip alone and cleft lip with cleft palate. Each case was assigned to one of three categories: nonchromosomal syndromes, orofacial clefts with chromosomal anomalies and unidentified syndromic orofacial clefts with one or more associated major anomalies. Malformations other than orofacial clefts were grouped according to malformation codes of the ISCD-10 and British Pediatric Association (BPA).

Results. There were 70 cases of nonchromosomal syndromes (20 different syndromes), 26 cases of orofacial clefts with different chromosomal abnormalities, and 141 non-syndromic patients with orofacial clefts and one or more associated major anomalies from the total of 235 persons with orofacial clefts and additional anomalies. There were 420 different anomalies in patients with unidentified syndromic orofacial clefts.

Conclusions. According to the results of this study, we can propose that all patients with OCs should be examined by the team of specialists such as pediatricians, plastic surgeons, orthodontists, cardiologists and others with a closer collaboration of clinical geneticists. A routine screening for other associated malformations, especially skeletal, central nervous system and cardiac defects, is required.

Key words: orofacial clefts, cleft lip and/or palate, chromosomal abnormalities, syndromic/nonsyndromic orofacial clefts

INTRODUCTION

Orofacial clefts (OCs) are the most frequent congenital malformations of the head and neck. In our previous paper (1) we described the incidence rate of cleft lip and/or palate among newborns in Lithuania during 1993–1997 and in the separate regions of Lithuania; the data were obtained from the Lithuanian Registry of Congenital Anomalies (LIRECA), Kaunas University of Medicine Clinic of Orthodontics and Clinic of Maxillo-facial and Oral Surgery, Institute of Odontology of Vilnius University, and Klaipėda City Center of Maxillo-facial Surgery. We demonstrated that isolated lip and/or palate clefts made 74.1% of all clefts. Orofacial clefts with additional anomalies made 25.9% of all clefts and, compared to the period 1953–1964, showed a statistically reliable increase owing to improved diagnostics and registration. The incidence of reported associated malformations varies considerably among different studies. Knock and Braitwaite (2) found that in Northumberland, 7.5% of the studied infants with OCs had other defects, whereas Leth Jensen et al. (3) reported prevalence at birth of 4.3%. In Finland, Lilius

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(4) reported that 21.8% of cleft lip and palate children had associated malformations, and Greene et al. (5) reported the prevalence at birth of 15%. Haberg reported that 22.3% of children from Sweden with OCs had additional malformations (6), while 29% of children were found to have an associated malformation in Pakistan (7).

There are differences of opinion regarding which organ system is most often affected by associated malformations. It is not known whether clefts are definitely related to specific types of other congenital malformations. Shprintzen (8) found malformations in the head and neck region to be most common associated malformations while Lilius (4) observed malformations of the extremities to be the most common. Milerad (9) found congenital heart disease to be the most common, isolated, associated malformation while Stoll (10) found central nervous system anomaly to be the most common, single other anomaly.

The other important point is to distinguish syndromic and nonsyndromic OCs. The differentiation of syndromic and nonsyndromic OCs is often subjective, differing in basic definition from one centre to another. There are no specific guidelines to define nonsyndromic OCs and syndromic OCs. A syndrome can be defined as a pattern of multiple anomalies to be pathogenetically related and not representing a sequence. In a syndrome, the level of the understanding of a pathogenetically related set of anomalies is usually lower than in a sequence. A syndrome commonly, but not always, implies a unitary etiology (11, 12).

The different opinions regarding cases of associated malformations with OCs prompted us to investigate the incidence and type of associated congenital defects in a geographically and ethnically well-defined Lithuanian population. Attention was focused on the number and nature of associated congenital anomalies and the specific clinical diagnoses. The national data were compared with reports from different geographic regions.

MATERIALS AND METHODS

The study group consisted of 235 patients with OCs and associated anomalies who presented to the Centre for Medical Genetics (CMG) at Vilnius University Hospital Santariškių Klinikos, Clinic of Maxillo-facial and Oral Surgery, Institute of Odontology of Vilnius University; also data from the Lithuanian Registry of Congenital Anomalies (LIRECA) and records of National Pathology Centre at the Ministry of Health of the Republic of Lithuania for 1993–2005 were used. All patients underwent examination by several team members (clinical geneticists, orthodontists and maxillo-facial and oral surgeons and pathoanatomists when autopsy was required) and, when indicated, laboratory tests such as cytogenetic, metabolic and molecular; also roentgenograms and other necessary instrumental studies were performed. All patients with craniofacial malformations who had no oral clefts or had submucous cleft palate, bifid uvulae, or minor anomalies were excluded. The study group consisted of patients with OCs and one or more major congenital anomalies. Minor anomalies were not included as associated malformations. They were important only for identification of syndromes. Major anomalies were deemed to be present if they were of functional or cosmetic significance requiring some degree of medical intervention (12). Minor anomalies were those of minimal or no cosmetic or functional significance and occurring in less than 5% of the population (12, 13).

The variables recorded for the study were the type of cleft, major anomalies and the diagnosis if determined. OCs were subdivided into three groups: cleft palate alone (CP), cleft lip alone (CL) and cleft lip with cleft palate (CLP). Based on the available clinical data, each case was assigned to one of the three categories:

- ✓ nonchromosomal syndromes such as Treacher Collins, Cornelia de Lange, Van der Woude syndromes and others
- ✓ OCs with chromosomal abnormalities, established by standard chromosome analysis performed from GTG banded metaphases with the resolution level of 400–500 bands
- ✓ unidentified syndromic OCs with one or more associated major anomalies.

We analyzed only major anomalies of the third group. Malformations other than OCs were grouped according to malformation codes of the ISCD-10 (Q.00–Q.99) and British Pediatric Association (BPA) (codes 740.0–759.9). The latter classification (BPA) was used in order to compare the published data with our results. ISCD–10 significantly differs from the mentioned above which is commonly used in other publications. The incidence of each malformation grouping, defined by these codes, was calculated in all three OCs groups: CP, CL and CLP.

RESULTS

There were 235 persons with OCs and additional anomalies in the study group examined in 1993–2005. All cases were subdivided into three groups: syndromic (70), OCs with chromosomal abnormalities (26), and non-syndromic patients with OCs and one or more associated major anomalies (141). Two patients were involved into two groups (syndromic and OCs with chromosomal abnormalities); these cases are discussed further in the text.

There were 20 recognized nonchromosomal syndromes in the first group which comprised 70 OCs cases. One of those most common was Pierre Robin syndrome (29 cases). There were 8 cases of holoprosencephaly

and 4 amniotic band sequences. All other syndromes are listed in Table 1.

There were 26 cases with chromosomal abnormalities (chromosomal analysis was done by cytogeneticists of Centre for Medical Genetics at Vilnius University Hospital Santariškių Klinikos). More than half of them were autosomal trisomies such as trisomy 13 (16) and trisomy 18 (1), others were partial trisomies (14p+; 13p+ and 10q+), partial deletions (2q-; 18q-) and reciprocal translocations (46, XX, t(10;11)(p11.2;q23.3), 46, XX, t(2;6)(p21;p25), 46, XY, -21,+mar [30]/46,XY, r(21) [10]/45,XY,-21[9]/46,XY[1]). The two cases of holoprosencephaly were included into both groups because they were with chromosomal abnormalities also (18q in one case and 46, XX, t(8;16)(p21.1;p13.1) in the other).

The nature of OCs was defined for 141 patients with unidentified syndromic OCs from which 41 were CP, 19 CL and 81 CLP cases. There were 420 different anomalies in patients with unidentified syndromic OCs. Most frequently affected was the musculoskeletal system (133 anomalies), followed by cardiovascular (90) and face (including eye and ear) and neck (64) anomalies. A more detailed analysis of the number of congenital anomalies that affected different organ systems is presented in Tables 2 and 3.

Table 1. **Syndromes associated with OCs**

Syndrome	n
Marshall–Smith syndrome	1
Constricting bands, congenital / Amniotic band sequence	4
Cornelia de Lange syndrome / Brachmann-de Lange syndrome	1
Ectrodactyly-Ectodermal Dysplasia-Clefting syndrome	2
Frontonasal dysplasia	1
Hemifacial microsomia, Goldenhar syndrome	3
Holoprosencephaly	8
Klippel–Feil syndrome, autosomal dominant	3
Oral-facial-digital syndrome (unknown type)	4
Pierre Robin syndrome	29
Rubinstein–Taybi syndrome	1
Smith–Lemli–Opitz syndrome	1
Stickler syndrome	2
Franceschetti–Klein syndrome / Treacher Collins syndrome	3
Van der Woude syndrome	3
Velo-cardio-facial syndrome	1
Waardenburg syndrome, type II	1
Walker–Warburg syndrome	1
Proboscis	1
Total	70

Table 2. **Frequency of malformations by affected organ systems in cases with unidentified syndromic OCs**

BPA code	Congenital anomaly	ISCD-10 code	CP	CL	CLP	Total
CENTRAL NERVOUS SYSTEM						
740.0	Anencephalus	Q00.0	1	0	4	5
741	Spina bifida	Q05	0	0	1	1
742.0	Encephalocele	Q01	2	0	1	3
742.1	Microcephalus	Q02	2	0	2	4
742.2	Reduction deformities of brain	Q04.0, Q04.3	1	3	3	7
742.3	Congenital hydrocephalus	Q03	5	3	10	18
742.4	Other specified anomalies of brain	Q75.3	1	0	1	2
742.5	Other specified anomalies of spinal cord	Q06.0	0	0	1	1
CONGENITAL ANOMALIES OF EYE						
743.0	Anophthalmos	Q11.1	0	0	4	4
743.1	Microphthalmos, small eyes	Q11.2	3	0	1	4
743.3	Congenital cataract and lens anomalies	Q12.0	2	0	0	2
743.4	Coloboma and other anomalies of anterior segments	Q13.1, Q13.3	1	1	0	2
743.5	Congenital anomalies of posterior segment	Q14.3, Q14.8, Q14.2	0	2	2	4
743.6	Congenital anomalies of eyelids, lacrimal system, and orbit	Q10.3	2	0	1	3
CONGENITAL ANOMALIES OF EAR, FACE AND NECK						
744.0	Anomalies of ear causing impairment of hearing	Q16.0, Q16.1	0	1	2	3
744.1	Accessory auricle	Q17.0, Q17.8	3	3	1	7
744.2	Other specified anomalies of ear	Q17.2, Q17.3, Q17.5	5	8	11	24
744.4	Branchial cleft, cyst, or fistula; preauricular sinus	Q18.3	2	0	1	3
744.8	Other unspecified anomalies of face and neck	Q18.5	2	0	0	2
744.9	Unspecified anomalies of face and neck	Q18.8	2	1	3	6

Table 2 (continued)

BPA code	Congenital anomaly	ISCD-10 code	CP	CL	CLP	Total
BULBUS CORDIS ANOMALIES AND ANOMALIES OF CARDIAC SEPTAL CLOSURE						
745.0	Common truncus	Q20.0	0	0	1	1
745.1	Transposition of great vessels	Q25.8	1	0	1	2
745.2	Tetralogy of Fallot	Q21.3	1	1	2	4
745.4	Ventricular septal defect	Q21.0	7	3	9	19
745.5	Ostium secundum type atrial septal defect	Q21.1	3	2	8	13
745.6	Endocardial cushion defects	Q21.2	2	1	1	4
746.1	Tricuspid atresia and stenosis	Q22.8	0	0	1	1
746.3	Congenital stenosis of aortic valve	Q25.3	0	1	0	1
746.4	Congenital insufficiency of aortic valve	Q23.9	1	0	0	1
746.5	Congenital mitral stenosis	Q23.8	0	1	0	1
746.6	Mitral valve insufficiency or regurgitation, congenital	Q23.3	0	0	1	1
746.7	Hypoplastic left heart syndrome	Q23.4	0	1	0	1
746.8	Other specified anomalies of the heart	Q24.0, Q24.8	0	0	3	3
746.9	Unspecified anomalies of heart	Q20.9	7	4	18	29
747	Other congenital anomalies of circulatory system	Q25.0	1	2	0	3
747.1	Coarctation of aorta	Q25.1	0	1	0	1
747.2	Other anomalies of aorta	Q25.2, Q25.4	0	1	1	2
747.3	Anomalies of pulmonary artery	Q25.5, Q25.6	1	1	1	3
CONGENITAL ANOMALIES OF RESPIRATORY SYSTEM						
748.1	Other anomalies of nose	Q30.1, Q30.9	0	0	1	1
748.5	Agenesis or aplasia of lung	Q33.6	1	0	4	5
OTHER CONGENITAL ANOMALIES OF UPPER ALIMENTARY TRACT						
750.2	Other specified anomalies of mouth and pharynx	Q38.5, Q38.6	1	0	0	1
750.3	Tracheoesophageal (T-E) fistula, esophageal atresia and stenosis	Q39.0, Q39.2	1	0	2	3
OTHER CONGENITAL ANOMALIES OF DIGESTIVE SYSTEM						
751.0	Meckel's diverticulum	Q43.0	0	0	1	1
751.1	Atresia and stenosis of small intestine	Q41.0, Q41.8	3	0	0	3
751.2	Atresia and stenosis of large intestine, rectum and anal canal	Q42.1, Q42.3	1	1	0	2
751.3	Hirschsprung's disease and other congenital functional disorders of the colon	Q43.1	0	0	1	1
751.5	Other anomalies of intestine	Q43.8, Q43.8	0	0	2	2
751.6	Anomalies of gallbladder, bile ducts and liver	Q44.7	0	0	1	1
751.7	Anomalies of pancreas	Q45.0	3	0	3	6
CONGENITAL ANOMALIES OF GENITAL ORGANS						
752.5	Undescended testicle	Q53	1	0	1	2
752.6	Hypospadias and epispadias	Q54, Q64.0	2	0	2	4
752.8	Other specified anomalies of male genital organs	Q55.6, Q55.9	0	1	1	2
CONGENITAL ANOMALIES OF URINARY SYSTEM						
753.0	Renal agenesis and dysgenesis	Q60.0	1	1	1	3
753.1	Cystic kidney disease	Q61.3	0	0	1	1
753.2	Obstructive defects of renal pelvis and ureter	Q62.0, Q62.2	3	0	1	4
753.3	Other specified anomalies of kidney	Q61.4, Q63.1, Q63.2, Q63.3, Q63.9	5	2	3	10
CERTAIN CONGENITAL MUSCULOSKELETAL ANOMALIES						
754.0	Of skull, face, and jaw	Q67.0, Q67.4	1	1	1	3
754.2	Certain congenital musculoskeletal deformities of spine	M41.8	1	2	0	3
754.3	Congenital dislocation of hip	Q65.4, Q65.8	1	0	3	4
754.5	Varus (inward) deformities of feet	Q66.2	2	2	9	13
754.6	Valgus (outward) deformities of feet	Q66.5	1	0	1	2
754.8	Other specified congenital musculoskeletal deformities	Q67.6, Q67.7	1	0	4	5

Table 2 (continued)

BPA code	Congenital anomaly	ISCD-10 code	CP	CL	CLP	Total
OTHER CONGENITAL ANOMALIES OF LIMBS						
755.0	Polydactyly	Q69.9	0	1	6	7
755.1	Syndactyly	Q70.9	6	3	3	12
755.2	Reduction defects of upper limb	Q71.3, Q71.6, Q71.4, Q71.8	5	1	2	8
755.3	Reduction defects of lower limb	Q72.0, Q72.3, Q72.3, Q72.8	3	1	4	8
755.5	Other anomalies of upper limb, including shoulder girdle	Q74.0	1	0	1	2
755.6	Other anomalies of lower limb, including pelvic girdle	Q74.1	0	0	1	1
755.8	Other specified anomalies of unspecified limb	Q68.8, Q74.8	6	1	10	17
OTHER CONGENITAL MUSCULOSKELETAL ANOMALIES						
756.0	Anomalies of skull and face bones	Q75.8, Q75.8, Q75.2	7	2	10	19
756.1	Anomalies of spine	Q76.0, Q76.5	1	1	3	5
756.3	Other anomalies of ribs and sternum	Q77.2, Q76.7, Q76.6	2	0	4	6
756.6	Anomalies of diaphragm	Q79.0, Q79.1	3	0	5	8
756.7	Anomalies of abdominal wall	Q79.2, Q79.5	0	0	6	6
759.0	Anomalies of spleen	Q89.0	0	0	1	1
759.1	Anomalies of adrenal gland	Q89.1	1	1	0	2
759.4	Conjoined twins	Q89.4	0	0	1	1

Table 3. **Frequency of other malformations in cases with unidentified syndromic OCs**

Miscellaneous anomalies associated with clefts	CP	CL	CLP	n
Hypopituitarism, congenital, 1	1	0	0	1
Unspecified mental deficiency	1	0	1	2
Unspecified speech deficiency	1	0	2	3
Developmental delay	1	0	2	3
Epilepsy, seizures	0	0	2	2
Strabismus	1	0	1	2
Hypermetropia	0	0	1	1
Myopia	0	0	1	1
Astigmatism	1	0	0	1
Blindness	1	0	0	1
Deafness	1	0	1	2
Right Hiss' fascicular block	0	0	1	1
Micrognathia	5	0	3	8
Inguinal hernia	0	1	4	5
Umbilical hernia	2	0	0	2
Hydrocele	3	0	2	6
Cardiac arrhythmias	1	0	1	2

DISCUSSION

Our study contributed to the relatively scarce literature data on congenital defects associated with OCs in Lithuania. In our previous paper (1) we analysed the incidence rate of cleft lip and/or palate among newborns in Lithuania in 1993–1997, therefore these data will not be discussed further. Our primary idea was to analyze OCs syndromic cases in Lithuania and to compare these data with the published results in the other geographically defined regions. According to the 2001 version of the London Dysmorphology database (14), there are 487 identified monogenic syndromes with OCs. There are a lot of patients with as yet undiscovered syndromes and sequences. This subgroup of patients represents an enormous source of heterogeneity within the population of individuals with clefts. According to Shprintzen (8), the number of specific courses for clefts could be as large as the number of patients in this group.

Czeizel et al. in their article (15) mentioned the first large hospital-based study which reported structural anomalies in more than 10% of 1013 patients with OCs. Since then, at least 50 publications have reported the prevalence rates of associated anomalies (15). In FitzPatrick's study, 55% of OCs with associated major congenital abnormalities had a cytogenetic, DNA-based or syndrome diagnosis (16). Shprintzen et al. reported similar results with 41% of OCs cases associated with major anomalies (8). In another study, reported by Sarkozi et al., of 653 cases with OC and multiple congenital anomalies, only 133 (20.4%) were part of a known etiological entity (17).

The above-mentioned publications prompted us to expand the present study. Diagnosis was confirmed to 40% (94 persons) of OC cases with associated malformations; residual patients formed a group of unidentified syndromic OCs with one or more associated major anomalies, which was further analyzed. There was a total

of 420 anomalies in 141 unidentified syndromic OCs cases, a mean of 2.9/proband. Lilius in 1992 found a total of 560 anomalies in 345 patients with OCs, a mean of 1.6/proband. Among three cleft types (cleft lip, cleft palate, and cleft lip and palate), the rate of associated malformations was highest in patients with cleft palate, a total of 141 anomalies in 41 patients, a mean of 3.44/proband; these data did not contradict Shafi's findings (18).

The largest group of associated anomalies involved the musculoskeletal system, followed by cardiovascular, face (including eye and ear) and neck anomalies. Three main groups (other congenital musculoskeletal anomalies, certain congenital musculoskeletal anomalies, other congenital anomalies of limbs) comprised musculoskeletal anomalies. The most frequent anomaly in the group of certain congenital musculoskeletal anomalies was *varus* deformity of feet (13 anomalies), syndactyly (12 anomalies), and other specified anomalies of unspecified limb (17 anomalies) prevailed in the group of other congenital anomalies of limbs while anomalies of skull and face bones (19 anomalies) were most common in the last group of musculoskeletal system anomalies. Among the associated malformations, bulbus cordis anomalies and anomalies of cardiac septal closure were less common, with ventricular and atrial septal defects prevailing (32 anomalies). The absolute number of other specified anomalies of ear comprised the biggest part of the congenital anomalies of ear, face, neck and eyes (24). It is difficult to compare these results with other similar studies, because the definition and classification vary from study to study, it is difficult to know the proportion of cases diagnosed by objective techniques; patients differed in age and race which themselves have different incidences of clefts (4, 10). Stark in 1968 found clubfoot to be the most common malformation. Other investigators have reported an increased number of the central nervous system malformations and anomalies in the head region (8). In Stoll's study (2000), anomalies of extremities and skeletal system were often associated with OCs (10). The results were compared in the chronological order. According to the study published in 1992 by Lilius (4), the biggest categories of anomalies were those affecting extremities (28 anomalies of club foot from 71), followed by cardiovascular (29 ventricular and 83 atrial septal defects) and facial anomalies, but it was difficult to compare data on the latter group because the structure of classification differed from that employed in our study. Congenital heart disease in Shafi's data was more common compared with other system anomalies (7), but results of Shaw in the same year (2003) did not confirm these results in a Californian population-based epidemiological study (19). If to compare the results of Sarkozi et al. (2005) with the data of our study, we can see a similar tendency of dominant musculoskeletal system defects (312 anomalies of 653).

The most common syndromes in the present study were Pierre Robin syndrome (29 cases), 8 cases of holoprosencephaly, 4 amniotic band sequences. The corresponding order in Lilius findings was as follows: Pierre Robin syndrome, Van der Woude syndrome, diastrophic dystrophy syndrome, velocardiofacial syndrome and fetal alcohol syndrome (4). In the period 1980–2005, the following genetic syndromes were identified in Latvian patients with OCs: Van der Woude, fetal alcohol syndrome, Holzgreve syndrome, Marfan syndrome, myotonic dystrophy, Klippel–Feil syndrome, Potter syndrome and Pierre Robin sequence (20).

Among 26 cases with chromosomal abnormalities the most common was trisomy 13. To compare with Sarkozi's data (29 cases of 31 chromosomal abnormalities) and Stoll's results (11 cases of 36 chromosomal syndromes), the similarity is obvious.

CONCLUSIONS

This study expanded the phenotype of OCs, and we hope it would be further helpful in cytogenetical and molecular genetic analyses of OCs and identification of clinical syndromes. The results of this study are very similar to the data reported by other authors in epidemiological studies of different geographic regions. According to their conclusions we can propose that all patients with OCs should be examined by a team of specialists such as pediatricians, plastic surgeons, orthodontists, cardiologists and others in a close collaboration of clinical geneticists. A routine screening for other associated malformations, especially skeletal, central nervous system, and cardiac defects is required to this group of patients.

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Eglė Zarakauskaitė, Aušra Matulevičienė, Algirdas Utkus, Vaidutis Kučinskas, Laura Linkevičienė

SU LŪPOS IR/AR GOMURIO NESUAUGIMU SUSIJUSIOS ANOMALIJOS LIETUVOJE

Santrauka

Tikslas. Darbo tikslas buvo nustatyti lūpos ir/ar gomurio nesuaugimų, susijusių su kitais įgimtais defektais, paplitimą ir tipą tiksliai apibrėžtoje geografinėje srityje – Lietuvos populiacijoje. Šie duomenys svarbūs tolesniems tarptautiniams populiacijos tyrimams.

Pacientai ir metodai. Tyrimo medžiagą sudarė asmenys, konsultuoti VšĮ Vilniaus universiteto ligoninės Santariškių klinikų Medicininės genetikos centre, Vilniaus universiteto ligoninės Žalgirio klinikos Veido ir žandikaulių chirurgijos skyriuje, kuriems buvo nustatytas lūpos ir/ar gomurio nesuaugimas ir vienas ar daugiau didžiųjų raidos defektų 1993–2005 metais, taip pat anketų duomenys iš LIRECA (Lietuvos paveldimų ligų ir įgimtų raidos anomalijų registras) registro bei autopsijų duomenys iš Valstybinio patologinės anatomijos centro prie Lietuvos Respublikos sveikatos apsaugos ministerijos. Lūpos ir/ar gomurio nesuaugimai buvo suskirstyti į tris grupes: gomurio nesuaugimą, lūpos nesuaugimą ir lūpos nesuaugimą kartu su gomurio nesuaugimu. Kiekvienoje grupėje buvo išskirtos trys atskiros kategorijos: nechromosominių sindromų, lūpos ir/ar gomurio nesuaugimų su chromosominiais persitvarkymais ir nenustatytų sindromų, kai lūpos ir/ar gomurio nesuaugimas yra kartu su vienu ar daugiau didžiųjų defektų. Vertinant didžiųjų defektų, išskyrus lūpos ir/ar gomurio nesuaugimą, pobūdį, jie suskirstyti pagal TLK-10 ir Britų pediatrų asociacijos parengtas klasifikacijas.

Rezultatai. Buvo išnagrinėti 235 asmenų su lūpos ir/ar gomurio nesuaugimu bei kitais didžiaisiais raidos defektais duomenys ir šie asmenys suskirstyti į tris pagrindines grupes: nechromosominių sindromų (70), su chromosominiais persitvarkymais (26) ir nenustatytų sindromų, kai lūpos ir/ar gomurio nesuaugimas yra kartu su vienu ar daugiau didžiųjų defektų (141). Nechromosominių sindromų grupėje buvo nustatyta 20 atskirų nozologinių vienetų, grupėje su chromosominiais persitvarkymais buvo nustatyta 11 atskirų chromosomų persitvarkymo variantų ir 420 skirtingų raidos defektų buvo nustatyta neidentifikuotų sindromų grupės pacientams.

Išvados. Atlikti tyrimų rezultatai rodo, kad tikslinga šiuos pacientus konsultuoti grupei specialistų, tokių kaip pediatras, ortodontas, plastinės chirurgijos specialistas, kardiologas, glaudžiai bendradarbiaujant su klinikiniais genetikais. Be to, būtinas su lūpos ir/ar gomurio nesuaugimu susijusių kitų įgimtų defektų, tokių kaip skeleto, centrinės nervų sistemos ir širdies, išsamus ištyrimas įvairiais instrumentiniais tyrimo metodais.

Raktažodžiai: lūpos ir/ar gomurio nesuaugimas, chromosomų persitvarkymai, sindrominiai ir nesindrominiai lūpos ir/ar gomurio nesuaugimai