

Pregnancy after 35 years of age

Ciąża po 35. roku życia

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Summary

The course of pregnancy among women aged 35 years and over is considerably affected by both the state of health before gravidity and the obstetric and gynaecological factors in the past. Analysis of health behaviour among women has demonstrated that there is a necessity of steady education of female patients about early and systematic obstetric care during pregnancy, attending the school of birth, folic acid supplementation as well as smoking cessation during pregnancy. Complications of the course of pregnancy and perinatal complications concern more frequently women aged 35 years and over, and delivery in this age group more frequently resulted in a caesarean section, mainly owing to elective indications.

Key words: pregnancy, caesarean section, puerperium, neonate.

Streszczenie

Na przebieg ciąży u kobiet w wieku 35 lat i starszych istotny wpływ ma stan zdrowia sprzed ciąży oraz przeszłość położniczo-ginekologiczna. Analiza zachowań prozdrowotnych kobiet wykazała, iż istnieje konieczność ciągłej edukacji pacjentek w zakresie wczesnej i systematycznej opieki położniczej w trakcie ciąży, uczestnictwa w szkole rodzenia, suplementacji kwasu foliowego oraz zaprzestania palenia tytoniu podczas ciąży. Powikłania przebiegu ciąży i komplikacje okołoporodowe częściej dotyczą kobiet w wieku 35 lat i starszych, a poród w tej grupie wiekowej częściej kończył się cięciem cesarskim, głównie ze wskazań elektywnych.

Słowa kluczowe: ciąża, cięcie cesarskie, połóg, noworodek.

Introduction

In recent years the average age of Polish women deciding to give birth to a child has increased steadily. The main factors determining the late pregnancy are related to both intentional delaying of becoming pregnant, due to a serious concern of achieving an appropriate economic status for the child and for oneself, and deliveries being the fulfilment of long-standing efforts of women, contending with problems in terms of keeping the pregnancy and infertility. A significant progress in birth control occurred owing to progressive education and increase of knowledge of women in terms of using more available contraceptives. Procreation decisions of women aged over 35 years have been significantly affected by the living conditions

and the social status of the examined respondents and their families. Women deciding for first pregnancy at a later age, to a large extent, have academic education and stable job [1].

In the literature of obstetrics, the issue of older women becoming pregnant for the first time has been very well-known for ages. According to the recommendation of the International Federation of Gynecology and Obstetrics (FIGO), a woman being pregnant for the first time at 35 years of age and over, should be defined as "old primigravida", and a woman aged 35 and over giving birth for the first time should be described as "old primipara" or "late primipara" [1, 2]. Currently, the age of 35 years of a woman has been most frequently considered in the literature as a limit for safe maternity [2, 3]. This limit has been increasingly frequently moved

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to 40 years and even further [4-7]. Nowadays, a tendency towards late first pregnancy has been observed increasingly frequently in developed countries.

In the last two decades in Poland, there has also been a significant increase of women delaying their maternity at later stages of their life [4-7]. The general state of health of women aged over 35 years is very frequently unsatisfactory [4, 8, 9]. Women aged over 35 years have been mainly suffering from diseases of the circulatory system, hypertension, thrombosis, diabetes mellitus, thyroid diseases, backbone degeneration changes as well as kidney diseases [4, 8, 9]. With age, the organism of a woman is subject to numerous changes, deepening as the years go by, affecting the woman's state of health and, accordingly, the course of pregnancy and health of the growing infant. The natural processes of ageing of the endosecretory and organic system, participating in the reproduction, are of paramount importance [7, 10].

The process of the secondary ovarian failure, beginning after 35 years of a woman's age plays a key and crucial role. The main medical and social problem is infertility among women aged over 35 years caused by a lack of reproductive abilities, as a result of the natural ageing processes of the reproduction system [11, 12].

Pregnancy and delivery after 35 years of age are related to numerous complications such as: pregnancy-induced hypertension, gestational diabetes mellitus, premature labour, infant's position other than head birth, increased proportion of caesarean sections or low birth weight of neonate [13]. Furthermore, passing this age limit increases the risk of foetal congenital malformations caused by chromosome disorders. The caesarean section delivery indicator has increased with age of the woman, regardless of her parity. The reason for that is an increased number of pregnancy and delivery complications, accompanying diseases or diseases induced by pregnancy as well as womb operations. Caesarean sections "on request" have been also observed among these women [13].

Infants of mothers aged over 35 years, more frequently show characteristics of prematurity and foetal malnutrition, worse birth state, higher number of perinatal complications and malformations [1]. The health state of an infant can also be affected by the father's advanced age and his sperm alterations. The infant and foetal perinatal mortality has also increased with age of the mother. Also, women aged over 35 years belong to a higher death risk group due to obstetrician reasons (haemorrhages, thromboembolic disease or pregnancy-induced hypertension) [7, 8, 14].

Aim of the study

The aim of this paper is to assess how age of the pregnant woman, aged over 35 years, influences the course of pregnancy, delivery and puerperium. A comparative

analysis of the course of pregnancy, delivery and the state of infants as well as the health behaviour has been conducted within pregnancy of women aged 35 years and over, and within a control group comprised of women aged between 20 and 30 years.

Material and methods

The course of pregnancy, delivery, puerperium and the state of infants were analysed among 130 women aged 35 years and over who gave birth to a child. The studies have been conducted in the Department of Obstetrics and Gynaecology of the Medical University of Silesia in Katowice, Poland. The control group comprised 150 randomly chosen female patients aged 20-30 years who gave birth to a child in the departments mentioned above, at the same time as women from the examined group.

The examined group (women aged 35 years and older) comprised two subgroups: the primiparas and the multiparas. The same procedure has been used for women aged 20-30, where a breakdown into the primiparas and the multiparas has also been applied. The conducted analysis of chosen aspects of obstetrics made it possible to reveal several differences, as a result of the parity criterion of the examined women. The essential data for the study came from both the disclosed medical documentation and the survey questionnaire filled in by the female patients.

Results and discussion

General characteristics

Within the examined material, the age of the oldest woman in labour was 46 years. In studies of other authors, the oldest women in labour were aged 43-47 years [4, 5, 13]. In our own studies, the largest part of the examined group comprised women in labour aged 35-39 years (73.8%), however women aged 40 and over accounted for 26.2%. Among primiparous women aged 35 years and over, women in labour in the age bracket of 35-39 years (86.1%) constituted the biggest part and among women aged 40 years and over, the percentage was 13.9%. Similar results were observed in studies of Skaźnik-Wikiel [13] and Lesińska-Sawicka [1].

Populations of 35-year-old women and older and women aged 20-30 years were also distinguished, among other things, according to the criterion of residence and education. Studies conducted in hospitals of Lublin and Krasnystaw [15] indicate that 61.0% of women came from the city and 39.1% from the countryside. The study reported that within both age groups, the number of female patients coming from the city accounted for over 80.0%, what probably may be a consequence of both more urban development of the

land, on which the studies have been conducted and the real demographic splits between the city and the countryside.

The educational structure of women in the older group, examined by various authors, clearly demonstrates that the largest group comprised female patients with secondary education (40.0-45.0%), while 14.0-21.0% of female patients had higher education [13]. In our own studies, a similar level of secondary education has been stated (43.1%), however the percentage of women with higher education was 41.5%. The primiparous women had more frequently higher education than the multiparous women (55.5% and 36.2%, respectively), however women giving birth to the next child had elementary education more than three times more frequently (19.1%).

In our own studies and in studies of other authors, a positive correlation with respect to the mother's and father's age is particularly noticeable. The average age of older mothers was 39 years, and fathers' age was 43.5 years. According to the literature, there is a higher risk of prevalence of malformation among children of older fathers. Ageing sperm can be subject to chromosome and gene mutations [10].

In the literature, the aspect of parity in the examined women populations has been repeatedly highlighted. In general, it is particularly noticeable that there is a tendency of a significant predominance of the multiparas within the older age group [4-6]. Similar data have been presented by Biesiada et al. [4], where in the group of women in labour aged 40-47 years, the number of primiparas and multiparas was 16.7% and 83.3%, respectively. Also Hincz et al. [2] confirm this correlation, where the percentage of primipara among women aged 35-39 was 15.76% and among pregnant women aged 40 and over – 10.0%. An analysis of deliveries in the hospital in Słupsk demonstrated that merely 2.1% of female patients aged over 40 years gave birth for the first time [6]. Our own studies also indicate that among older women in labour, multiparas represent the overwhelming majority (altogether 72.3%). A profound literature data analysis proves that there is a constant tendency of moving the procreative age towards older women. Such an age moving of the first pregnancy entails a drop of the total of children and a reduction of the population growth rate. Undoubtedly, the development within the supported reproduction technologies also contributed to a large number of primiparas aged over 35 years [2, 9].

The general state of health of women aged over 35 years is frequently unsatisfactory [1, 4, 8, 9]. The older women in labour mainly suffered from diseases of the circulatory system, arterial hypertension and thrombosis [4, 8, 9]. In our own studies, it has been demonstrated that women aged 35 and over, have been

more frequently chronically ill than younger female patients. Furthermore, it has also been stated that there is a significantly higher prevalence of hypertension, hormonal disorder, varices of lower extremities, eyesight defect as well as diseases of the procreative system, alimentary system, bone system and urine system in the examined group, with relation to the comparative group ($p < 0.05$). It has also been noticed that there is a correlation between age and frequency of disease incidents requiring surgical medical interventions. The examined women delaying pregnancy were subject to a surgical intervention twice more frequently than women in labour aged 20-30 years (30.0% and 16.0%, respectively).

Past gynaecological surgical interventions prior to pregnancy also contribute to the course of fertilization, pregnancy and the way of delivery. Within the analyzed material, in 17.7% of older women in labour, a surgical intervention on the sex organ has been conducted, however within the group of women aged 20-30, merely 4.7% of patients underwent such a surgical intervention. Both ovary surgeries and myomectomy surgeries occurred significantly more frequently in the examined group than in the comparative group ($p < 0.05$).

These surgical interventions were mostly performed on older primiparous women (30.5%). According to the studies of Lesińska-Sawicka, gynaecological surgeries were performed on 10.1% of women giving birth to the first child at later stages of their lives, however in the control group only 1.1% of women underwent such an intervention [1].

The fertility and opportunity to get pregnant is decreasing with age. According to the collected material, infertility was treated three times more frequently among older women than among patients in the comparative group. This issue mainly concerned primiparous women aged 35 years and over – 44.4% of them got infertility treatment and every third woman became pregnant thanks to supported procreation technologies. The longest average infertility treatment time was stated in the group of primiparous women aged 35 and over (8.3 years). Similar results in this respect were obtained in the paper of Skaźnik-Wikiel et al. [13]. However, Lesińska-Sawicka reported 16.7% of infertility treatment incidents among primiparous women aged 35 years and over [1].

The study findings stated an almost threefold higher prevalence (28.5%) of past miscarriages in the group of older women compared with younger women, in which 20.0% of women had one miscarriage in the interview, 8.5% had two and more miscarriages. In our own studies, it has also been demonstrated that the problem of obstetric failures mostly concerned the primiparous women aged 35 years and over – 36.1%, of which 16.6% had two or more miscarriages in the past. Among primiparas at optimal procreative age, miscarriages

were observed among 11.1% of the examined women. According to another study, comparison of primiparas aged over 35 years with women aged 20-30, a crucial predominance of spontaneous abortions has been stated in the interview among the older group of female patients (28.5% vs. 9.2%) [13]. Both the disorder of hormonal activities and the abnormalities within the sex organ might be considered as a potential reason for the higher percentage of pregnancy failures among older women. It is essential to highlight that around 2/3 of spontaneous abortions are related to the abnormal foetal karyotype.

Course of pregnancy

A detailed analysis of the course of pregnancy was conducted among the examined women as to planning the current pregnancy, pregnancy pathophysiology, mother's diseases complicating the pregnancy as well as duration of pregnancy. In order to present a full exemplification, these topics have also been considered depending on the variable parity of women. From among the surveyed primiparous women, the older primiparas usually planned their pregnancy (86.1%, $p < 0.05$), however among multiparas – women aged 20-30 giving next childbirth planned their pregnancy.

Skażnik-Wikieł et al. [13] noted a visible difference of IUGR prevalence among neonates of primiparas aged over 34 years (7.5%) and among neonates of mothers aged 20-30 years (0.8%). The analysis of our own material demonstrated that frequency of IUGR prevalence in both populations was at a similar level (20.0% and 18.0%, respectively). IUGR mostly concerned fetuses of primiparous women aged 35 years and over – 25.0%, while 18.0% of incidents of IUGR were observed among younger women.

Placenta praevia is typically observed among women aged 35 years and older. The frequency of this pathology is 0.8-1.5% [10, 16]. In our own material, placenta praevia accounted for 0.8% of the gravidas aged 35 years and over, and it has not been stated in the younger group. The data mentioned above confirm that multiparity as well as advanced age of the mother are listed among risk factors [17, 18].

Considering the frequency of placental abruption in the examined material, it was merely reported in 0.8% of older female patients. This state was observed considerably more frequently by Kaźmierczak et al. [3] among women aged 35 years and over – 5.8% and in the group aged under 18 years – 2.0%.

Many authors pay attention to mother's diseases occurring during pregnancy [2, 4, 5, 18]. The predominating disorders with respect to the number of incidents are pregnancy-induced hypertension as well as gestational diabetes mellitus, which significantly more frequently occur among gravidas aged 35 years and over than among female patients aged 20-30 years.

The issue of pregnancy-induced hypertension (PIH) in the group of women aged 40-47 years (17.2%) was considered by Biesiada et al. [4]. These findings were comparable to our own studies within the older age group (19.2%). However, within the younger group of respondents, this percentage was 8.0%. Studziński et al. [6] presented PIH in one in ten women aged over 40 years. Similar results were found by Chibber [19].

The overview of literature indicates an advanced state of examinations of gestational diabetes mellitus. In the studies conducted by Studziński et al. [6], the frequency of diabetes mellitus was analyzed among gravidas aged 40 years and over (8.0%) as well as among gravidas aged 20-30 years (2.0%). Diabetes mellitus among older gravidas was observed in the paper of Hincz et al. [2] among 7.1% of women aged 35-39 years as well as among 5.0% of women aged 40 years and older. The retrospective analysis of Biesiada et al. [4] contended that 4.9% of gravidas aged 40-47 years suffered from diabetes mellitus. The high percentage of diabetes mellitus among primiparas (30.5%) aged 35-43 years, was also noted by Skażnik-Wikieł et al. [13]. In the same studies, diabetes mellitus was detected almost threefold less (12.3%) among gravidas aged 20-30 years. This tendency has been confirmed by our own studies, where 12.3% of incidents of diabetes mellitus were reported among older female patients, however among younger patients this percentage was 3.3%. This disorder was observed significantly more frequently among primiparas aged 35 years and over – 16.6%, however 1.8% of incidents were stated among gravidas giving birth to the first infant at optimal age. The reason for such a situation is most probably the deteriorating competence of cells β or insulin sensitivity with age and, accordingly, a reduced glucose tolerance [16, 20].

The course of pregnancy is also frequently complicated by anaemia. Within the examined material, anaemia occurred among 13.8% of women from the older age group as well as among 8.6% of younger women. Similar values have been presented by Biesiada et al. [4], where the percentage was 13.6% within the population of gravidas aged 40-47 years. Studies conducted in Warsaw stated the frequency of anaemia at a level of 9.5% among women aged 35-39 years, however among female patients aged 20-30 years this percentage was 10.8% [13]. Significantly lower values were observed by Studziński [6], namely 2.0% of women of 40 years of age and older and 1.0% of younger women aged 20-30 years.

Our own analysis contended frequent infections of air passages among older gravidas (16.9%). These disorders were observed twice more rarely among younger gravidas (8.0%). This reference was merely found in the study of Studziński [6]. He observed a higher exposure among younger women aged 20-

-30 years (14.0%), however the percentage among women of 40 years of age and older was 12.0%.

Studies of Studziński [6] also included the determination of exposure of gravidas to infections of urine passages (2.0% - in the older age group, 12.0% - in the younger age group). These results were also confirmed by the study of Biesiada et al. [4], where this disorder was observed among 1.2% of women aged 40-47 years. In our own study, the proportion was as appropriate 7.7% in the older group and 8.0% in the younger group.

In the literature, there were discrepancies as to frequency of cholestasis among gravidas in particular age groups. Our own studies contended that cholestasis was revealed among 1.5% of older women and among 0.6% of younger women. Skażnik-Wikieł et al. [13] observed the above-mentioned disorder among 5.3% of female patients aged 35-43 years, however among 1.5% of those aged 20-30 years. Biesiada et al. [4] detected cholestasis among women aged 40-47 in 2.4% of the examined incidents.

Health behaviour of women before and during pregnancy

Proper medical care of pregnant women can considerably improve the outcome of pregnancy. The regular medical care from the first trimester on is particularly important [10]. According to our own studies, women aged 35 years and over, more than twice more frequently than gravidas aged 20-30, visited the obstetrician, in the current pregnancy, for the first time in the second and third trimester (26.9% and 12.7%, respectively). The average number of visits to an obstetrician was identical in both examined groups and was 8.7.

Due to a higher risk of genetic defects, pregnant women aged 35 years and over have the opportunity to perform antenatal examinations. In our own studies, an antenatal USG was performed among 40.8% of women at advanced age and 52.3% of them underwent biochemical tests. The invasive antenatal diagnostic procedure was selected by 9.3% of older women. Similar observations concerning the invasive antenatal examinations were seen in the study of Lesińska-Sawicka [1]. The reasons for that situation are mainly based on the low popularity of these examinations, lack of knowledge in the society as well as concerns of parents about health and proper foetal development [1]. Studies concerning the acceptance of antenatal diagnostic procedures among gravidas aged 35 years and older, clearly demonstrate that these women prefer invasive examinations the least due to fear of pain and pregnancy complications, which may occur in the course of or after a surgical intervention, and may include: miscarriage, perforation of placenta or foetal needle injuries [21].

According to our own studies as well as studies of Lesińska-Sawicka [1], education of patients by means

of schools of birth is not popular among pregnant women. Most of the surveyed women from both age groups (77.7% and 84.7%), declared that they had attended classes in the school of birth never before. Female respondents who attended classes, from the examined group as well as from the control group, were primiparas, what can be explained by means of their prevalent interest in the course of pregnancy, delivery and infant care as well as concerns towards the new situation, which in fact is delivery and maternity.

The unfavourable effect of passive and active smoking by gravidas on the course of pregnancy and foetal development is commonly known. Therefore, it is alarming that in our own study as many as 16.1% of women from the older age group and 10.6% of those from the younger one, did not stop smoking during pregnancy.

Course of delivery

The subsequent stage of examinations constituted the assessment of the course of delivery in the examined populations of women. The effect of age and parity of women was specified for: foetal position, course of beginning of delivery, symptoms of foetal danger during delivery, way of pregnancy completion, indications for caesarean section, average time of delivery and natural course of delivery.

In our own studies, significant alterations in preterm deliveries have not been found in the examined group (27.7%) and in the comparative group (22.6%). In their studies, Studziński [6] and Kaźmierczak et al. [3] observed a similar percentage of preterm deliveries among the population of older women (19.0% and 21.0%, respectively), however this abnormality occurred several times more rarely among younger women.

Considerable changes in the number of preterm deliveries were observed in our own material only after taking into consideration the parity of the examined women. The number of deliveries before the end of the 37th week of pregnancy was 38.8% among primiparous women aged 35 years and older, compared with 21.3% in the subgroup of primiparas aged 20-30 years. The higher percentage of preterm deliveries among older primiparas has been caused by the substantially higher prevalence of pathophysiology of pregnancy as well as mother's diseases revealed during pregnancy and, accordingly, affecting the course of pregnancy. In studies of Lesińska-Sawicka [1], the preterm delivery was seen threefold more frequently in the group of primiparas after 34 years of age than in the control group. Skażnik-Wikieł et al. [13] did not state any statistically significant changes in the number of deliveries before the end of the 37th week of pregnancy between groups of female patients giving birth to the first child at later stages of their life or at optimal procreative age.

In the literature, a higher percentage of surgical deliveries among gravidas after 35 years of age is noted. Both sudden and elective caesarean sections have been performed more frequently as compared with younger women [6, 13, 20]. In our own studies, the caesarean section has been performed in 63.0% of women of 35 years of age and older, while among female patients in the age bracket of 20-30 years, 42.0% of pregnancies have been delivered by means of a surgical intervention. An overwhelming part of caesarean sections have been performed electively – 73.2% in the examined group and 66.6% in the comparative group. Comparative analysis of the delivery among older and younger primiparas indicates that among women giving birth to their first child at 35 years of age or older, the caesarean section was performed almost twice more frequently, while natural deliveries were observed 2.4 times less. Similar observations were made by Lesińska-Sawicka [1]. In studies of Skażnik-Wikieł [13], the number of caesarean sections was three times higher compared with the group of women aged 20-30 years.

According to the literature on this subject, the threatening foetal asphyxia is the predominating indication for the caesarean section for gravidas aged 35 years and over. The percentage of caesarean sections performed for this reason in the group of older women is, according to authors, 31.6-42.2% [3, 13]. In the study cited above, the frequency of threatening foetal asphyxia was reported among younger patients at a similar level, namely 29.4-41.18%. In our own material, the threatening foetal asphyxia concerned 23.8% of younger women and 13.3% of women aged 35 years and over. High exposure of primiparas at optimal age was confirmed by the study of Skażnik-Wikieł et al. [13] (42.2%). Lack of development of delivery, noted both in our own studies and in the literature, has been statistically significantly more frequent among younger primiparas [13].

The caesarean sections among women aged over 35 years have been performed statistically significantly more frequently due to prior past surgical interventions on uterus, uterine myomas, advanced age, foetal defects as well as non-obstetric indications. These findings were confirmed by both our own studies and data from literature [5, 10, 13]. According to researchers, among women aged over 35 years caesarean sections have been performed more frequently on patients' request, what potentially may result, among other things, from women's fear of natural delivery as well as the concern of losing the long expected child. Merely 2 of such incidents were obtained in our own material in the group of patients aged 35 years and over [5, 10, 13].

In our own studies, in subgroups of older and younger multiparas, the length of the first, second and third period did not significantly differ from each other. Similar observations were reported by Studziński [6]. The comparative analysis of length of delivery periods

among primiparas from both groups contended that the first period of delivery lasted longer among older women (354.4 minutes and 318.0 minutes, respectively), however the average duration time of the second and third period was similar. Other observations were made by Skażnik-Wikieł et al. [13] who did not state any considerable changes in terms of the length of particular stages of delivery. A significantly shorter average duration time of delivery among female patients examined by myself, in comparison with the data from literature, most probably has resulted from both the frequently used delivery stimulation by means of oxytocine and the actively supported delivery by the medical staff.

It is also worth highlighting that among the examined patients, as many as 100.0% of older primiparas and 92.3% of women being in labour to the first child at optimal age, gave birth in a natural way with a perineal incision. These findings may be a result of routine episiotomy during the physiological delivery performed among primiparas, regardless of their age. In the available literature, there have not been found any studies analysing this aspect of delivery.

No significant differences have been found in the average amount of lost blood in comparison between older and younger patients giving birth naturally and those undergoing a caesarean section. However, according to the studies [5, 10, 13] the average perinatal loss of blood was bigger among women aged 35 years and over.

Course of puerperium

In subsequent stages of this study, an analysis of the course of puerperium has been performed among the examined populations of women including: frequency of complications, subjective assessment of women in childbirth, their mental state as well as the average time of hospitalization. Only few reports concern the course of puerperium among women giving birth to a child at later stages of their life. According to Biesiada et al. [4], the course of puerperium does not considerably differ between older and younger women. In our own studies, complications during this period occurred more frequently in the group of patients aged 35 years and over. Anaemia was most frequently observed in both groups, what has also been confirmed by studies of Biesiada et al. [4]. The higher percentage of anaemia during puerperium, among older women giving birth to the first child, has been caused by deterioration of anaemia from the pregnancy period as a result of loss of blood during delivery, especially during the caesarean section, which was performed among these female patients in as many as 75.0%.

The examined women also subjectively evaluated their mental state after the past delivery. Most of female respondents assessed their state as good. This answer was given by about 2/3 of women in both compared

age groups. The percentage of patients who declared their mental state as very good, was in both examined populations almost identical (27.7% and 27.3%). A negative opinion was expressed by only 6 patients among the older women and by 4 patients among younger counterparts.

State of health of neonates

In the subsequent part of the paper, a detailed analysis of the state of health of neonates was performed as regards: body birth weight, Apgar score in the first and fifth minute of life, congenital malformations as well as perinatal mortality. These topics were also considered depending on the variable parity of mothers of newborn infants. According to many authors, the age of a mother has not affected the birth weight and the state of health of neonates [2, 4, 5, 9]. Similarly, in our own studies, no significant differences were stated both in the total birth weight and in the Apgar score assessment of neonates of mothers, coming from the examined and comparative group. Considerable differences were observed after analysing the above-mentioned parameters depending on the parity. Infants of mothers aged 35 years and over who gave birth for the first time, reached almost three times more frequently a weight below 1500 g than neonates of younger mothers. Neonates of primiparas aged 35 years and over, in the first minute of their life, in more than 51.0% reached less than 8 points in the Apgar score, out of which a serious state was observed in 7.7% – more than four times more frequently than among newborn infants of mothers giving birth to the first child at optimal procreative age (1.8%). To the least extent, the improvement of state of health in the fifth minute of life occurred among neonates of primiparas aged 35 years and over. This fact should be combined, among other things, both with higher frequency of deliveries before the end of week 37 of pregnancy and with higher exposure to congenital malformations among neonates of older primiparas. Comparable findings were obtained by Lesińska-Sawicka [1]. Skaźnik-Wikieł et al. [13], however, did not state any differences in the birth weight of neonates of older and younger primiparas, and the Apgar score below 8 points in the first minute of life was observed in 11.8% of neonates from the group of women aged over 34 years and in 5.5% of infants of mothers aged 20-30.

Considering the existence of congenital malformations among neonates, an almost three times higher risk of these abnormalities was stated among women aged 35 years and over. The opinions are contradictory among the authors. In the study by Włodarczyk [22], the higher age of mothers positively correlated with childbirth with the Down syndrome. According to studies of other Polish authors, significant statistical changes

were stated [13, 16]. Analysis of our own material according to the parity criterion enables us to notice that congenital malformations were revealed most frequently among infants of multiparas aged 35 years and over (14.0%). Among older primiparas, congenital malformations were revealed in 10.3% of infants, while these anomalies concerned 2.7% of neonates of younger mothers. Skaźnik-Wikieł et al. [13] observed congenital malformations merely among older primiparas (6.3%). Most probably, the contributory factor for congenital malformations, in some cases, is the advanced age of parents indirectly determining a defective development of embryo.

Miller contended a two times higher prevalence of intrauterine foetal deaths in the group of patients aged 35 years and over [23]. In the study by Hincz et al. [2], statistically significant changes of this abnormality were not reported in the group of female patients aged over 35 years and in the comparative group. In our own studies, three intrauterine foetal deaths were observed and all of them concerned the group of older patients.

Conclusions

The course of pregnancy among women aged 35 years and over, is considerably affected by both the state of health before gravidity and the obstetric and gynaecological factors in the past. Analysis of health behaviour among women has represented that there is a necessity of steady education of female patients about early and systematic obstetric care during pregnancy, attending the school of birth, folic acid supplementation as well as smoking cessation during pregnancy. Complications in the course of pregnancy and perinatal complications concern more frequently women aged 35 years and over, and delivery in this age group more frequently resulted in a caesarean section, mainly owing to elective indications. Primiparas aged 35 years and over are significantly more frequently exposed to complications in the course of pregnancy as well as to perinatal complications than women giving birth to the first child at optimal procreative age. Foetal defects have been seen more frequently among neonates of older mothers.

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