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Determination of complementary therapies for prevention of striae gravidarum

Stria gravidarumun önlenmesi için kullanılan tamamlayıcı terapilerin belirlenmesi

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Abstract

Background and Design: Striae gravidarum (SG) has been reported to be associated with various factors, but the role of complementary therapies in the prevention of SG is still not well understood. The aim of this study was to determine complementary therapies for prevention of SG.
Materials and Methods: This descriptive research was conducted on 120 pregnant women in a maternity clinic at a university hospital. Of 120 women, 49 were going through the last trimester and 71 were going through their first postpartum 24 hours. Data were collected using a 25-item-questionnaire through face-to-face interviews between June and July in 2016. Obtained data were evaluated by using descriptive statistics, chi-square test and the Kruskal-Wallis test.
Results: 90.8% of women had SG. For the prevention of SG, 46.7% of women used massage, a manipulative body-based complementary therapy, 55.2% used oils, 28.6% used creams and 8.0% used a mixture of creams and oils for massaging. 42.9% of women started to use complementary therapies in their first trimester. Half of the women stated that they had received information about complementary therapies. A significantly lower rate of women using massage had SG compared to those not using massage (p=0.023).
Conclusion: It was concluded that nearly half of the women used massage for the prevention of SG. In addition, massage application was found to reduce the occurrence of SG.
Keywords: Stria gravidarum, complementary therapies, massage, aromatherapy

Öz

Amaç: Stria gravidarum (SG) gelişiminde çeşitli faktörlerin ilişkisi olduğu belirtilse de önlenmesinde tamamlayıcı terapilerin rolü halen açık şekilde ortaya konmamıştır. Bu çalışma ile SG'nin önlenmesinde kullanılan tamamlayıcı terapilerin kullanımının ve etkinliğinin belirlenmesi amaçlanmıştır.
Gereç ve Yöntem: Tanımlayıcı tipte olan bu çalışma bir üniversite hastanesinin kadın hastalıkları ve doğum kliniğinde yürütülmüştür. Çalışmanın örneklemini son trimestrinde 49 gebe ve doğum sonu ilk 24 saatte 71 kadın olmak üzere toplam 120 kadın oluşturmuştur. Veriler 25 sorudan oluşan bir form yardımıyla, Haziran-Temmuz 2016 tarihleri arasında yüz yüze görüşmelerle toplanmıştır. Çalışma verileri tanımlayıcı istatistikler, ki-kare ve Kruskal-Wallis testleri yapılarak değerlendirilmiştir.
Bulgular: Kadınların %90,8'inde SG olduğu, %46,7'sinin SG'yi önlemek için manipülatif-beden temelli tamamlayıcı terapilerden aromaterapi masajını kullandığı saptanmıştır. Aromaterapi masajının %55,2 yağ, %28,6 krem ve %8,9 krem ve yağ karışımını kullanılarak yapıldığı bildirmiştir. Kadınların %42,9'u masaj uygulamasına ilk trimesterde başlamıştır. Kadınların yaklaşık yarısı tamamlayıcı terapiler konusunda bilgi aldığını belirtmiştir. Masaj uygulayan kadınlarda SG görülme oranı, uygulamayan kadınlarda SG görülme oranına göre istatistiksel olarak anlamlı düzeyde daha düşük bulunmuştur (p=0,023).
Sonuç: Kadınların yaklaşık yarısının SG'nin önlenmesinde masajı kullandığı görülmektedir. Ayrıca masaj uygulamasının SG oluşumunu azalttığı da bulunmuştur.
Anahtar Kelimeler: Stria gravidarum, tamamlayıcı terapiler, masaj, aromaterapi

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Introduction

Striae gravidarum (SG), stretch marks which appear during pregnancy, is one of the most frequent skin changes in this period[1,2]. They may frequently occur on the abdomen and sometimes occur on hips, breasts, legs and axillae in 50%-90% of pregnant women mostly during the 6th-7th months of pregnancy. They look like red or purple atrophic lines and may become pale later, which makes it less clear, but they do not disappear completely. There have been studies showing that SG cause itching, disrupted body image and decreased self-respect[1,3-7]. It is thought that relaxing effects of estrogen, relaxin and adrenocortical hormones and tension in the anterior abdominal wall can create SG although the etiology is not clear[3,4,7]. It is known that women mostly do massage by using aromatherapy, essentials or commercial creams for prevention. However, there have been studies revealing conflicting results about these methods and their effectiveness. In a study by Canpolat et al.[5], 76% of women used topical moisturizers and balms such as vaseline, cocoa oil and almond oil for prevention of SG during pregnancy, but no relationship was found between use of these products and SG development[5]. Similarly, Osman et al.[8] and Ersoy et al.[9] also showed that using creams did not prevent this skin condition. Unlike the abovementioned studies from Turkey, in their study, García Hernández et al.[10] reported that using creams prevented development of SG and decreased the severity of striae. The primary aim of the present study was to investigate complementary therapies and to determine effectiveness of these therapies used by women to prevent SG and to show risk factors likely to affect SG development.

Materials and Methods

This descriptive study was performed on 120 women in the maternity and obstetrics clinics at a university hospital. Of 120 women, 49 were going through their last trimester and 71 were going through their postpartum 24 hours. Women with multiple pregnancies and polyhydramnios and chronic diseases, such as diabetes mellitus, hypertension, goiter, asthma, collagen tissue disease, and those unconvinced or having doubts about the use of complementary therapies to prevent SG were excluded from the study.

Data were collected at face-to-face interviews between June and July 2016 with a personal characteristics form created by the researchers in the light of the literature. The questionnaire was composed of 25 questions about socio-demographic and obstetric features as well as knowledge of SG. Skin color was determined by the researchers in accordance with Fitzpatrick classification.

Study Ethics

Ethical approval was obtained from the ethics committee and university hospital. Akdeniz University's Clinical Research Ethics Committee (approval number: 418). All the participants gave oral informed consent.

Statistical Analysis

Obtained data were analyzed with descriptive statistics, a chi-square and the Kruskal-Wallis test. A p value of less than 0.05 was considered significant.

Results

Out of 120 women included in the study, 50% were aged 26-34 years, 50.9% were high school and university graduates, 41.7% had skin type 4 and 34.2% had a normal skin feature (Table 1). 52.5% of women were multigravida and 47.5% were primigravida.

90.8% of women had SG. Of all these women, 82.8% had SG on their abdomen (50% had mild SG), 40.9% on their legs (60.0% had mild SG), 36.8% on their hips (53.8% of them had moderate SG) and 25.5% had SG on their breasts (65.4% of them had mild SG) (Table 2). Family history revealed that mothers or sisters of 60% the women had SG (Table 1). 46.7% of women had massage, a manipulative and body-based therapy, to prevent SG since the first trimester. 55.4% of women used oils, 28.6% used creams and 8.9% used a mixture of creams and oils for massaging. 42.9% and 57.1% of women reported to use oils or creams in their first trimester and every day, respectively (Table 1).

Types of products utilized by the women to prevent SG were sweet almond oil (33.4%), cream (29%), olive oil (10.2%), baby oil (10.2%), centaury oil (5.8%), sesame oil (4.3%), cocoa oil (4.3%) sycamore oil (1.4%) and apple oil (1.4%). About half of the women noted that they received information about practices for preventing this condition. Sources of information were friends, family members and neighbors for 46.0% of women, internet for 21.3%, nurses for 11.4%, doctors for 11.4% , chemists for 5.0%, herbalists for 3.2% and books for 1.7% of women.

While maternal age, type of delivery, family history of SG and massaging were found to affect SG development, fetal weight, head circumference, number of pregnancies, weight gain before and during pregnancy and body mass index did not have any effect (Table 3). The mean age of the women developing SG was significantly lower (28.13±5.84), than that of the women without SG (32.36±5.02 years) (p=0.014). A significantly lower rate of women giving vaginal birth (48.3%) had SG compared to women having caesarian section (51.7%) (p=0.039). Similarly, a significantly lower rate of women applying massage (43.1%) had SG when compared to women not having massage (56.9%) (p=0.023). However, a significantly higher rate of the women with a family history of SG (63.3%) had this condition during their pregnancy as compared with women without a family history (36.7%) (p=0.026) (Table 3).

Discussion

In this study, complementary therapies women utilize to prevent SG and risk factors for SG were examined. Although SG, commonly encountered in most women, does not cause life-threatening conditions, they can create cosmetic problems[5-7]. Nine out of every 10 women in perinatal period were found to have SG in the present study. The prevalence of this condition varies in the literature. Several studies from Turkey have shown that the prevalence of SG ranges from 60% to 84%[5,8,9,11,12]. The prevalence found in the present study was higher than that reported in the studies from Turkey.

In the current study, young age of the mothers and family history of SG were found to increase the risk for development of this condition. Likewise, young age has been reported to cause a rise in SG in the literature[5,8,9,11,12]. This can be attributed to the fact that fragility of fibrils is increased and that naturally occurring tension damages microfibrils[5]. It has also been reported that family history of SG raises the risk of this condition[5,8,9,11,12]. This association suggests that genetic factors may

Table 1. Sociodemographic features, skin colors and practices preventing striae gravidarum

Features	n	%
Age (years)		
18-25	39	32.5
26-34	60	50.0
35-39	17	14.2
40 and over 40	4	3.3
Education		
Literate	9	7.5
Primary education	50	41.6
High school and higher education	61	50.9
Smoking status		
Yes	4	3.3
No	116	96.7
Alcohol intake		
Yes	1	0.8
No	119	99.2
Skin types		
Type 1	18	15.0
Type 2	18	15.0
Type 3	34	28.3
Tip 4	50	41.7
Skin features		
Normal	41	34.2
Dry	22	18.3
Oily	39	32.5
Mixed	18	15.0
Presence of SG		
Yes	109	90.8
No	11	9.2
Familial history of SG		
Var	72	60.0
Yok	48	40.0
Applying practices preventing SG		
Yes	56	46.7
No	64	53.3
Practices preventing SG		
Creams	16	28.6
Oils	31	55.4
A mixture of creams and oils	5	8.9
Others	4	7.1
Time of starting to massage		
1st trimester	24	42.9
2nd trimester	24	42.9
3rd trimester	8	14.2
Frequency of massaging		
Every day	32	57.1
Every other day	10	17.9
Every three or four days	10	17.9
Every week	4	7.1

SG: Striae gravidarum

play a role in SG development. In addition, the present study revealed that the rate of SG was higher in women undergoing caesarian section. However, Canpolat et al.[5] reported that caesarian section was not involved in this condition.

One of the fundamental practices for preventing SG is complementary therapy. Although massaging with creams, oils or a mixture of oils and creams was found to decrease SG in this study, no comparisons could have been made between types of oils and SG development due to a wide variety of oils used by the women. There have been studies with conflicting results about the effects of cream and oil application on prevention of SG. Kılıç et al.[12] noted that not using creams and/or oils was a risk factor for development of this problem. In a randomized

Table 2. Body parts where striae gravidarum was located and severity of striae gravidarum

Body parts	SG		Mild (1-5)		Moderate (6-10)		Severe (11 and more than 11)	
	n	%	n	%	n	%	n	%
Abdomen	96	82.8	48	50	28	29.2	20	20.8
Legs	45	40.9	27	60	13	28.9	5	11.1
Hips	39	36.8	14	35.9	21	53.8	4	10.3
Breasts	26	25.5	17	65.4	6	23.1	3	11,5

SG: Striae gravidarum

Table 3. Factors likely to be effective in striae gravidarum development

		Presence of SG n (%)	Absence of SG n (%)	p
Type of delivery	**Vaginal**	43 (48.3)	1 (10.0)	**0.039***
	Caesarian	46 (51.7)	9 (90.0)	
Familial history of SG	**Yes**	69 (63.3)	3 (27.3)	**0.026***
	No	40 (36.7)	8 (72.7)	
Massaging	**Yes**	47 (43.1)	82 (81.8)	**0.023***
	No	9 (56.9)	2 (18.2)	
		Presence of SG Mean ± SD	**Absence of SG Mean ± SD**	**p**
Infant birth weight (gram)		2969.3±704.5	3011.1±635.3	0.731
Infant head circumference (cm)		34.94±0.90	34.80±0.97	0.663
Maternal age		28.13±5.84	32.36±5.02	**0.014***
Number of pregnancies		1.90±1.29	2.09±1.22	0.438
Weight gain during pregnancy (kg)		11.80±6.95	10.63±4.75	0.372
Weight before pregnancy (kg)		66.96±14.0	61.36±9.42	0.166
Body mass index (kg/m²)		29.36±5.03	26.68±3.93	0.072

*p<0.05, SD: Standard deviation, SG: Striae gravidarum

double-blind study in Spain, a cream containing rosehip oil was shown to decrease the severity of SG, prevent its development and stop progression of the existing condition[10]. In an experimental study in Turkey, 15-minute massaging with bitter almond oil was found to reduce SG development[13]. However, Canpolat et al.[5] and Ersoy et al.[9] reported that use of creams was not effective. In addition, a randomized, double blind study from Iran revealed that use of a cream containing olive oil and lanolin in the second trimester did not prevent SG development[14]. Another study from Iran showed that utilization of olive oil in the second trimester was not preventive against SG development[15]. Soltanipoor et al.[16] from Iran found in their randomized, double-blind study that olive oil decreased the frequency of severe SG, but had no effect on the incidence and intensity of this condition. Randomized, double blind studies on women from the Caribbean[17] and Lebanon[18] showed that cocoa oil did not decrease or prevent SG. These studies with conflicting results underline the need for well-designed randomized, double blind studies to test effects of oils and creams employed to decrease and prevent SG.

Skin tension that frequently increases during pregnancy has been blamed for SG development. Being overweight before pregnancy[5,9,12], increased weight gain during pregnancy[5,8,12], a high number of pregnancies[2], increased birth weight[5,8,12] and increased head circumference[12] have been shown to be risk factors for SG. In the present study, all the above-mentioned factors, causing a rise in skin tension, were not found to affect its development.

Study Limitations

The women who participated in this study did not have much variety in the agents they used to prevent SG. It was a limitation of this work that did not allow comparing which agent was effective for prevention of SG. Therefore, it is recommended to study in a larger sample group.

Conclusion

In light of the results, it was found that 9 out of every 10 women in the perinatal period were having SG, about half of the women were using massage to prevent SG, and massage prevented the formation of SG. On the other hand, the diversity of products that women use has limited ability to carry out further analysis to reveal the product effective in preventing SG. Therefore, these results show us the need for randomized controlled trials comparing the oils used in SG prevention. It can be recommended that health professionals should provide preconception counseling to women for preventable risk factors for SG and massaging with oils and creams. Women should also be informed about non-modifiable risk factors like family history of SG and maternal age. In addition, women should be made aware of the fact that oils and creams utilized to prevent this condition should be under the control of health professionals. It can also be suggested that well-planned double-blind randomized studies should be carried out to test superiority of oils in preventing SG.

Ethics

Ethics Committee Approval: Ethical approval was obtained from Akdeniz University's Clinical Research Ethics Committee (approval number: 418).

Informed Consent: A consent form was completed by all participants.

Peer-review: External and internal peer-reviewed.

Authorship Contributions

Concept: G.T., İ.B., Design: G.T., İ.B., Data Collection or Processing: G.T., İ.B., H.Ş.A., Analysis or Interpretation: G.T., İ.B., Literature Search: G.T., İ.B., Writing: G.T., İ.B.

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