Giorn. It. Ost. Gin. Vol. XXXV - n. 2
Marzo-Aprile 2013

original article

The physiological menopause: an aging process from the ovaries to the skin through the psyche

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SUMMARY: **The physiological menopause: an aging process from the ovaries to the skin through the psyche.**

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Introduction. *Menopause shows new anatomic and functional limits and produces physical damage and psychological discomfort.*

Aim. *Have been described the end-points that allow us to value the welfare state, and the illnesses produced by menopause.*

Materials and methods. *240 women, aged 45-55 years old (DS 2.58), in menopause, were divided into 4 groups according to the habit to smoke or to photoexposition. Were evaluated: the phototype (by Saidman Test), the psychological damages (by Machover test, Zung test on the anxiety and on depression, Schedule of Recent Experiences, interview psychologist-subject), the systemic damages (by menopause rating scale), the skin damages (by Glogau signs and ultrasound). Results were recorded at the start study and after 6 and 12 months follow-up.*

Results. *The discomfort starts in 156 patients on menopause initial stage of and after a 12 months follow-up it appears in 120 patients with a decrease of 24%, while the skin damages do not show significant changes. The Spearman correlations among the tests show high significance ($p < 0.0001$).*

Discussion. *The fertility is a perception of the female identity. The menopause changes this one with a consequent psychological and syntomatological uneasiness that requires to be rationalized. The importance of the anxiety and of the depression decrease to the remission of the symptoms. These ones are mostly present in the groups with habit to the smoke or to the photoexposition.*

Conclusions. *The used method can be considered as diagnostic end points of the menopause and they show the importance of the uneasiness and suggest removing promoting factors such as the stress, smoke and/or the photoexposition.*

RIASSUNTO: **La menopausa fisiologica: un processo di invecchiamento dalle ovaie alla cute attraverso la psiche.**

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Introduzione. *La menopausa evidenzia nuovi limiti anatomici e funzionali e produce danni fisici e disagi psichici.*

Scopo. *Sono stati descritti gli endpoints che permettono di valutare lo stato del benessere ed i disagi prodotti dalla menopausa.*

Materiali e metodi. *240 donne di 45-55 anni (DS 2,58), in menopausa, sono stati divise in 4 gruppi considerando l'abitudine al fumo e/o alla fotoesposizione. Sono stati valutati: il fotoptipo (con il test di Saidman), i danni psicologici (con i test di Machover, Zung sull'ansia e sulla depressione, la Schedule of Recent Experiences ed un colloquio psicologo-soggetto), i danni sistemici (con la menopause rating scale), i danni cutanei (classificazione di Glogau e l'indagine ecografica). I risultati sono stati registrati all'inizio e dopo un follow-up di 6 e 12 mesi.*

Risultati. *Il disagio era presente nella fase iniziale della menopausa in 156 pazienti e dopo un follow-up di 12 mesi in 120 pazienti con un decremento del 24%, mentre i danni cutanei non evidenziavano variazioni significative. Le correlazioni di Spearman tra i test evidenziano alta significatività ($p < 0,0001$).*

Discussione. *La fertilità costituisce la percezione dell'identità femminile. La menopausa modifica questa percezione con un conseguente disagio psicologico e sintomatologico che richiede di essere razionalizzato. L'intensità dell'ansia e della depressione decresce con la remissione della sintomatologia. Esse sono maggiormente presenti nei gruppi con abitudine al fumo e/o alla fotoesposizione.*

Conclusioni. *Le metodiche descritte possono essere considerate come endpoints diagnostici della menopausa, evidenziano l'intensità del disagio e suggeriscono l'allontanamento di fattori elicitanti quali lo stress, il fumo e/o la fotoesposizione.*

KEY WORDS: Ovaries - Skin - Psyche - Menopause.
Ovaie - Cute - Psiche - Menopausa.

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Introduction

The functional exhaustion of ovaries stops the production of estrogen and produces biological damage and psychological discomfort (Table 1). The first promotes the aging process with a unknown mechanism, the last derives from the consequent reduction in opioid peptides (neurotransmitters with central action) and in tryptophan (precursor of serotonin) which stimulate the mood's tone (1-3). The aging involves body structures in their entirety imposing new anatomic and functional limits. These ones can change the complex process of adaptation, accomplished by the psyche during the experimentations and interactions with the environment (4,5). In the progressive acquisition of this "new" or "diverse" are especially involved – the structures connected with the reproduction and the lactation which form the purpose of the species to continue itself such as the femininity requires (sexual purpose) – and skin structures through them the femininity makes itself visible to conquest the partner (aesthetic purpose). Menopause may be included in the aging process, but such physiological evolution is not free from physical damage and psychological problems (6,7).

The clinical and diagnostic end-point allow us to value the welfare state, the physical damage and psychological illnesses produced by menopause have been researched and described.

Materials and methods

Two hundred forty wealthy women, aged 45-55 years old (DS 2.58), with normal weight, adipose tissue normally represented and phototype III-IV, have been enrolled in this study. They have gone in menopause for 6-7 months and they practiced hormone replacement therapy (8,9). Subjects have been divided into 4 groups (60 women each) according to the habit to smoke and/or to photoexposition (Table 2). The subjects with regular consumer of alcohol (>500cc-12°/day), dissociative disorders and/or disorders included in DSM-IV criteria for post-traumatic stress and/or avoiding and/or passive-aggressive personality, with inflammatory and/or atrophic skin lesions (in order to avoid the aging and/or pathogenetic processes), were excluded in this study. As not *psychological stress* carriers, were considered the subjects with absence of traumatic events for 12 months at least; as not smoking the subjects with abstention for 5 years at

TABLE 1 - MAIN CLINICAL SIGNS OF MENOPAUSE ACCORDING TO THE PSYCHOLOGICAL, SYSTEMIC AND SKIN (GLOGAU SKIN AGING SIGNS) ASPECT.

Aspect	Signs
Psychological aspect	
	irritability, nervousness, vulnerability in character, dysphoria
	anxiety amplification emotional wounds, emotional fragility
	sleep-wake cycles disorders, tiredness sense
	depression, loss of self-esteem, fear of the future
	loss of libido, loss of aesthetic wellness
Systemic aspect	
Neurological	decline in capacity of concentration and of memory
	Alzheimer's disease
Osteomuscolar	arthralgia distal joints, muscle pain, osteoporosis
Genitourinary	dyspareunia, disorgasm and burning after the sexual intercorse
	dryness and vaginal atrophy, reduction of pleasure
	polimenorrhea oligomenorrhea, ipomenorrhea, ipermenorrhea
	cystitis, urethritis, tenesmus, dysuria, pollakiuria, nocturia, incontinence
Metabolic	increase lipids, dyslipidemia, diabetes, obesity
Cardiovascular	arteriosclerosis, hypertension, thrombosis, arrhythmia, heart attack
	erythema, sudden sweating, feeling cold
Skin aspect	
Aspecific signs	dehydration, atrophy, slow healing, calasis, ipoelasticity
	xerosis, itching, defluvium, urticaria
Glogau signs:	
early	slight wrinkles, few dischromias
slight	wrinkles to the movement, freckles senile, keratosis palpable
advanced	wrinkles when at rest, evident dischromias, teleangiectasias, visible keratosis
serious	wrinkles spread, yellow-grey skin, neoplastic skin

least (groups I and III in Table 2); as smoking (groups II and IV in Table 2) the consumers more than 15 cigarettes/day (average for cigarette: tar 7.5 mg, nicotine 0.55 mg, carbon monoxide 9mg) for 10 years at least; as not photoexposed the exposed subjects in a direct way to UV radiation for less than 50 hours/year (groups I, II in Table 2); as photoexposed the exposed subjects for more then 200 hours/year (groups III, IV in Table 2) (6,10-12).

Have also been evaluated: the phototype with Saidman Test, the psychic state with the Machover test, the absence of psychological stress not related to menopause with the different degrees of positivity of the Schedule of Recent Experiences (SRE), the psychological damages related to the menopause with 1one interview psychologist-subject and with the psichodiagnostical Zung test on the anxiety (SAS) and on depression (SDS), the systemic damages with the menopause rating scale (MRS), the skin damages with the Glogau clinical classification and with the ultrasound (US) of the skin on the forehead (10-12) (Table 3).

Results were described listing the methods of inquiry for psychological, systemic and skin aspects, and the interpretative values were expressed by a Likert scale and by the Kopeikin score (Table 2) (13). They were recorded at the beginning of the study (6 months later the onset of the menopause's symptoms), after 6 months and 12 months (12 and 18 months later the onset of symptoms respectively) follow-up. The Spearman correlations among the results were carried out and considered as control 50 women aged 18-30 years old (DS 3.34) (Table 1).

Results

Results show the discomfort as follows (Table 2):

- in the initial stage of menopause with very low levels in 18 patients, low in 66 patients, moderate in 84 patients and high in 72 patients
- after a 12 months follow-up with very low level in 36 patients, low in 84 patients, moderate in 78 patients and high in 42 patients (Table 2).
- between the initial stage of the menopause (3 months after the beginning of the symptoms) and the 12 months follow-up (15 months after the beginning of the symptoms) very low and low levels increase from 84 to 120 patients with an increase of 42.85%, while moderate and high levels decrease from 156 to 120 patients with a decrease of 24%.

Skin tests have recorded as below:

- in the initial stage of menopause very low level in 111 patients, low in 99, moderate in 30 and high in no patient (Table 3)

TABLE 2 - THE STUDY GROUPS AND THE RESULTS DESCRIBED FOR EACH STUDY GROUP.

Beginning study (6 months after the onset of the menopause's symptoms)														
Patients			**Aspect**											
Group	Habit		Psychological				Systemic				Cutaneous			
	Photo	Smoke	MB	B	M	E	MB	B	M	E	MB	B	M	E
I	No	No	18	42			18	42			60			
II	No	Yes			18	42			21	39	45	15		
III	Yes	No		24	36			24	36		06	56		
IV	Yes	Yes			30	30			27	33		30	30	
Total			18	66	84	72	18	66	84	72	111	99	30	00
After 12 months follow-up (18 months after the onset of the symptoms of the menopause)														
Patients			**Aspect**											
Group	Habit		Psychological				Systemic				Cutaneous			
	Photo	Smoke	MB	B	M	E	MB	B	M	E	MB	B	M	E
I	No	No	27	33			27	33			60			
II	No	Yes	03	06	24	27	03	06	24	27	42	18		
III	Yes	No	06	39	15		06	39	15		06	54		
IV	Yes	Yes		06	39	15		06	39	15		30	30	
Total			36	84	78	42	36	84	78	42	108	102	30	00

- after a 12 months follow-up very low level in 108 patients, low in 102, moderate in 30 and high in no patient (Table 3).
- between the initial stage of the menopause and the 12 months follow-up there are no significant changes.

The Spearman correlations among the values of the psychological aspects (SRE, SAS Zung, emotional and cognitive SDS Zung, psychological MRS) have shown high significance ($p < 0.0001$). Among these tests and systemic tests (somatic SDS Zung, clinic MRS) the correlations have got high significance ($p < 0.0001$) too. This is also present among the values of the cutaneous aspects (Glocau and US signs). On the other hand, there is no significant correlations between the values of the cutaneous aspects and psychological and/or systemic ones. Co-morbidity is described in table 4. It is present with systemic diseases in 38 pa-

TABLE 3 - METHODS AND RESULTS.

Results in 240 women												
Methods of investigation:	Beginning study (3 months symptoms)				6 months follow-up (9 months symptoms)				12 months follow-up (15 months symptoms)			
	mB	B	M	E	mB	B	M	E	mB	B	M	E
Psychological aspect												
SRE	18	66	84	72	30	84	78	48	36	84	78	42
SAS Zung	15	66	87	72	27	84	78	51	36	87	75	42
SDS Zung areas:												
emotional	15	66	84	75	27	87	78	48	36	84	78	42
cognitive	18	69	81	72	30	84	75	51	36	84	75	45
MRS (5 item)	18	69	81	72	30	84	78	48	36	84	75	45
Systemic aspect												
SDS Zung soma	18	66	84	72	30	87	81	48	33	87	78	42
MRS (6 item)	18	66	87	69	30	87	75	48	36	87	78	39
Overall judgment of the test and interview on psycho-symptomatological aspect												
	18	66	84	72	30	84	78	48	36	84	78	42
Cutaneous aspect												
Glogau signs	114	96	30	00	114	96	30	00	108	102	30	00
Ultrasound signs	108	102	30	00	108	102	30	00	108	102	30	00
Legend: the numbers are related to the subjects.												
Methods and interpretative values expressed in Likert scale and Kopeikin score												
Methods of investigations	Very low (MB)			Low (B)			Moderate (M)			High (E)		
SRE	01-75			76-149			150-299			> 300		
SAS	01-20			21-40			41-60			61-80		
SDS:												
emotional area	01-13			14-16			17-19			20-28		
cognitive (mental) area	01-06			07-09			10-11			12-16		
somatic (physical) area	01-17			18-19			20-22			23-36		
MRS	01-11			12-22			23-33			34-44		
psychological (5 item)	00-05			05-10			10-15			15-20		
clinical (symptoms 6 item)	01-06			06-12			12-18			18-24		
Glogau signs (face)	early			slight			advanced			serious		
US (forehead):												
ecogenicity dermis	increased			increased/reduced			reduced			very reduced		
ecogenicity hypodermis	normal			normal			reduced			very reduced		
thickness dermis	2,0 ± 0,5			1,5 ± 0,5			1,0 ± 0,5			1,0 ± 0,5		
thickness hypodermis	2,0 ± 1,5			2,0 ± 0,5			1,5 ± 0,5			1,0 ± 0,5		

TABLE 4 - THE DISTRIBUTION OF THE CO-MORBIDITY IN 240 PATIENTS (147 CASES IN 137 PATIENTS).

Sistemic diseases: 53 cases in 38 patients						Skin diseases: 104 cases in 96 patients					
Hy	D	A.ti	C	A.si	N	Def	ACD	Pso	ICD	Urt	LSA
21	19	07	03	02	01	42	21	16	12	09	04
1	1		1			1					
1	1				1						
3	3					3					
2	2										
1		1									
2			2								
1										1	
	2	2									
	1			1							
	2							2			
						2	2				
						3		3			
						2			2		
						1				1	
10											
	07										
		04									
				01							
						30					
							19				
								11			
									10		
										07	
											04

Number of associated diseases	Number of patients
04	01
03	04
02	19
01	113
00 (menopause only)	103

Legend:

Iper	*Hypertension*	*D*	*diabetes*	*A.ti*	*arthritis*
C	*cardiovascolar diseases*	*A.si*	*arthrosis*	*N*	*nephritis*
Def	*defluvium*	*ACD*	*allergic contact dermatitis*		
Pso	*psoriasis*	*ICD*	*irritative contact dermatitis*		
Urt	*urticaria*	*LSA*	*lichen sclerosus and atrophicus*		

tients (15.8333% of cases) and with dermatological diseases in 96 patients (40% cases) (Table 4). Results of the tests did not show significant differences among the 134 patients with co-morbidity and the 103 patients with menopause only.

Discussion

The interviews have shown fragility and vulnerability of the different components of the character, easy susceptibility to external events in the choice of decisions and interests and amplification of emotional hurts and presence of anxiety and depression especially (14-16). They have helped us to understand the ability to generate and the desire for motherhood were included in wider concept of fertility and these ones constitute the perception of feminine identity (7,17). This was made "res" in role games of childhood and after it begins to be "object" since the first menstrual cycle. This identity acquires in time new formative elements promoted from experiential role that the subject woman exercises in society as wife, mother and worker-woman. The onset of menopause causes a different perception of this identity with a consequent psychological discomfort associated with a physical or symptomatic one. It involves the significance and value that women refer to their own role

in human relations and to their own body like a promoter means of emotional and social relationships. The menopause also allows the emotional conflicts, accumulated in lived and compensated by the acquisition of a sufficient psycho-physical balance, to emerge and resubmit the previous themes, causing the discomfort, to the new awareness of reality. The intensity of the discomfort, or better of its perception, depends on factors already present in the personal history such as: the experiential events, the culture, the socio-economic and environmental state (7,16,17). The menopause event requires the woman to restructure her identity. This was confused or lost, as well as it was emerging from the interviews. Sometimes it was rejected and no longer linked to the imitating behaviours or habit patterns of the past where these ones were a constant source of security, certainty and self-esteem, because they were always tested and implemented during the life (14,15). The woman subjects have perceived this state as a diversity and as a loss of a welfare state which demanded to be accepted. The menopause, with the mourning of the different and of the welfare, must be rationalized as the expression of a recently lived. It can also qualify as a biological protection in conservation of the species. This has been suitable in remote times because it has prevented the procreation in mature age (less vigorous and with more exposed ovules to possible mutations). So the procreation is expedited in young women which may concentrate in their offspring sufficient attentions and food availability (4,5,7,17).

Tests have also shown the intensity of the anxiety and of the depression gradually decreases with the remission of the symptoms (Tables 2 and 3) and they has been mostly present in groups with habit to smoke and/or to the photoexposition. The interwiews have allowed us to understand these habits could not compensate for the recently discomfort of menopause, because they constitute a transitional compensatory insufficient welfare who sometimes is already present and experienced from the subject in various other discomforts. Smoking and the photoexposition may intensify the symptoms and the skin damage (6,11) and then the intensity of the anxiety and of the depression (7,15,17) too. In addition, these ones require as to be differentiated from those conventional or endogenous where the symptoms are more serious and less discontinuous (17). The Glogau aging signs and the ultrasound findings have persisted unchanged during the 18 months study. They, in fact, have been produced from only aging process or increased by photoexposure and/or by habit to smoke, require a longer period of time to become evident in both ultrasound and clinical signs (6,11). The skin damages have shown greater intensity in the groups with habit to photoexposure and/or to smoke (table 2), in same direction as the literature. Women in menopause have shown aging signs like to those ones described in previous studies and in subjects of the corresponding groups with or without habit to smoke and/or to the photoexposition and, therefore, to male subjects too (6,11). Although the examined sample is not numerous it get the beginning menopause to consider a cause of the symptomatic disorders and psychological discomfort with increase in states of anxiety and of depression. Furthermore, the menopause not produce an acceleration of the aging skin, during hormone replacement therapy, and the psycho-physical discomfort progressively decreases with the evolution of the rationalization processes and with the acquisition in own lived of new substitutive factors (hobbies, cultural and social interests, familiar and experencial rewards).

Conclusions

The employed methods have been described in Table 3. They can be considered as diagnostic end points of the skin and of the psyche during the menopause. Psychological tests and interviews suggest the status of acceptance and/or the importance of the discomfort in the women during the menopause. Skin tests can track the status of skin aging and suggest the removal of promoting factors such as the smoke and/or the photoexposition. In clinical practice we can consider as standard values of normal skin aging those ones described in the literature (7,11) and corresponding in values and age to the first group. In the other groups the chronological age does not agree with biological one being the first (for life habits) more advanced than the last.

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