



شبكة المعلومات الجامعية

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شبكة المعلومات الجامعية
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شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



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جامعة عين شمس

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قسم

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بالرسالة صفحات لم ترد بالاصل

Zagazig University
Benha Faculty of Medicine
Dermatology and Andrology Department.

**CATALASE AND GLUTATHIONE PEROXIDASE
IN PATIENTS WITH VITILIGO**

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UP

Thesis

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Dermatology & Andrology

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Contents		Page
Introduction		1 – 3
Aim of the study		4
Review of literature		5 –58
Patients and methods		59 – 66
Master sheet		67 – 68
Results		69 – 85
Discussion		86 – 94
Summary and conclusions		95– 98
Recommendation		
References		100 – 116
Arabic summary		

Abbreviations

AOC	Antioxidant capacity.
bFGF	Basic fibroblast growth factor
6 BH ₄	(6R) – L- erythro 5,6,4,8 tetrahydrobiopetrin.
CAT	Catalase enzyme.
DHI	5 – 6 Dihydroxy indole.
DHICA	Dihydroxy indole carboxylic acid
DOPA	Dihydroxy phenyl alanine
GPX	Glutathione peroxidase.
GR	Glutathione reductase.
GSH	Reduced glutathione.
GSSG	Oxidized glutathione.
ICAM-1	Intercellular adhesion molecule-1
MCH	Melanin concentrating hormone.
MCHR 1	Melanine concentrating hormone receptor 1
5 MOP	5 Methoxypsoralen.
8 MOP	8- Methoxypsoralen.
Mn SOD	Manganese superoxide dismutase
MSH	Melanocyte stimulating hormone.
PPARS	Peroxisomal Proliferator activator receptors.
ROS	Reactive oxygen species.
SOD	Superoxide dismutase.
IL	Interleukin.
TNF α	Tumour necrosis factor alpha
TRP- 1	Tyrosinase related protein 1
TRP- 2	Tyrosinase related protein 2
UVA	Ultra violet A
UVB	Ultra violet B

List of tables

Table	Title of tables	Page
1	Some of biologically important antioxidants.	55
2	Study participants distribution according to sex.	70
3	Comparison of age presentation among both groups.	70
4	Patients' distribution according to sex and age.	70
5	Patients distribution according to the presence of positive family history of vitiligo and presence of diabetes mellitus .	73
6	Blood glutathione peroxidase enzyme activity and tissue catalase activity in both studied groups.	74
7	Blood glutathione peroxidase and tissue catalase activity levels in patients < 60 years old versus patients $\geq$ 60 years old .	78
8	Mean vitiliginous skin tissue catalase and blood glutathione peroxidase enzyme activity levels according to diseases' state.	80
9	Blood glutathione peroxidase enzyme activity and tissue catalase in diabetic and non – diabetic patients.	83

List of Figures

Figure	Title of figures	Page
1	Biochemistry of melanogenesis	11
2	Fine structure of melanocyte	15
3	Proposed pathways leading to depigmentation in vitiligo	26
4	Distribution of study participants according to sex	71
5	Mean age of controls and patients	71
6	Patients' distribution according to sex and age.	72
7	Mean blood glutathione peroxidase levels in both groups	75
8	Mean catalase levels in skin biopsies taken from control group and patients normal and vitiliginous skin.	76
9	Blood glutathione peroxidase in patients ≥ 60 years old versus those < 60 years old.	79
10	Tissue catalase activity levels in patients < 60 years old versus those ≥ 60 years old.	79
11	Mean vitiliginous skin tissue catalase levels in patients group according to state of disease activity	80
12	Mean blood glutathione peroxidase enzyme activity levels in patients group according to state of disease activity.	81
13	Mean blood glutathione peroxidase activity levels in patients (diabetics and non diabetics).	84
14	Mean tissue catalase enzyme activity levels in diabetic patients in normal and vitiliginous skin	84
15	Mean tissue catalase enzyme activity levels in non-diabetic patients in normal and vitiliginous skin	86
16	Mean tissue catalase enzyme activity levels in patients (diabetics and non diabetics).	86

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Introduction

Introduction

Vitiligo is a common pigmentary disorder that affects individuals of all ethnic origins equally, with a prevalence close to 0.5- 5% of the world population (**Boisseau- Garasaud et al., 2000**).

The aetiology of vitiligo is still unknown. Beside the most popular autoimmune theory, several groups had shown the involvement of oxidative stress in the pathophysiology of the disease (**Maresca et al., 1997**).

The accumulation of hydrogen peroxide and low catalase levels had been demonstrated in the epidermis of vitiligo patients (**Schallreuter et al., 1999**).

The observations of **Tobin et al., (2000)** had shown that melanocytes are still present in the epidermis of patients with long duration vitiligo. Melanocyte cultures were successfully established from depigmented epidermal suction blister tissue of all 12 randomly selected patients and these cells produced melanin. Furthermore the vacuolation of melanocytes of patients with active disease was reversible upon exogenous addition of bovine catalase to the culture medium.

In addition, the presence of clustered and single premelanosomes in basal and suprabasal keratinocytes of lesional and normal epidermis, as well as the retention of single

melanocyte in lesional epidermis, was demonstrated by light and electron microscopy. Upon topical application of a narrow band UVB- activated pseudocatalase, vacuolation, granulation and dilatation of endoplasmic reticulum completely recovered but the ectopic premelanosome shedding remained. Taken together, these observations indicated that melanocytes are never completely absent in the depigmented epidermis and that these melanocytes can recover their functionality in vivo and in vitro upon removal of hydrogen peroxide (**Tobin et al., 2000**).

Few disturbances of antioxidants had been described in the blood of vitiligo patients, apart from an elevation of selenium, an important factor for glutathione peroxidase activity (**Beazly et al., 1999**).

Yildirim et al., (2003) studied, the role of oxidative stress in the pathogenesis of generalized vitiligo. Superoxide dismutase, glutathione peroxidase and glutathione levels in erythrocytes and serum malondialdehyde and nitric oxide were investigated in 24 patients with generalized vitiligo and 20 healthy controls. Results indicated that significantly increased levels of erythrocyte superoxide dismutase, serum malondialdehyde, and nitric oxide were associated with a marked reduction in erythrocyte glutathione peroxidase and glutathione activities in patients with generalized vitiligo. These observations suggested that the presence of an imbalance of