

Evaluation of Late Onset Acne in Females

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of Dermatology and Venereology*

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List of Abbreviations

15-HETE	15-hydroxy eicosate traenoic acids
17-HSD	17-hydroxy steroid dehydrogenase
3-HSD	3-hydroxysteroid dehydrogenase
3β-HSD	3β- hydroxysteroid dehydrogenase
5α- R	5α –reductase
5-LOX	5-Lipoxygenase enzyme
AA	Arachidonic acid
ARs	Androgen receptors
AChR	Acetylcholine receptor
ACTH	Adrenocorticotropic hormone
Apo C1	Apolipoprotein C1
BPO	Benzoyl peroxide
CAH	Congenital adrenal hyperplasia
CRH	Corticotropin-releasing hormone

CPA	Cyproterone acetate
COX-2	Cyclooxygenase-2
DHEA	Dehydroepiandrosterone sulphate
DHT	Dihydrotestosterone
E2	Estradiol
ECLIA	Electrochemiluminescence immunoassay
EE	Ethinyl estradiol
EGFR	Epidermal growth factor receptor
EGF	Epidermal growth factor
GAGS	Global acne grading system
HS	Highly significant
HSD	Hydroxysteroid dehydrogenase
HSPs	Heat shock proteins
IGFs	Insulin-like growth factors
IGF1R	Insulin growth factor-1 receptor

IL-1	Interleukin-1
IL-6	Interleukin-6
IL-8	Interleukin-8
KGF	Keratinocyte growth factor
MC5R	Melanocortin-5 receptor
MMPs	Matrix Mettalloproteinases
MSH	Melanocyte stimulating hormone
N	Number
NP	Neuropeptides
NS	Non significant
OCPs	Oral contraceptive pills
P. acne	Propionibacterium acne
P450sc	P450 side chain cleavage
PCO	Poly cystic ovary
PDT	Photodynamic therapy
PG	Prostaglandins

PPARs	Peroxisome proliferator activated Receptors
PSU	Pilosebaceous unit
PUVA	Psoralen and UVA
QoL	Quality of life
RAR	Retinoic acid Receptors
ROS	Reactive oxygen species
RXR	Retinoid X Receptor
S	Significant
SPSS	Statistical program for social science
T	Testosterone
TLRs	Toll like receptors
TLR-2	Toll-like receptor 2
UVA	Ultra violet A
χ^2	Chi-square test

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Introduction

Acne represents a pleomorphic inflammatory skin problem centered on the pilosebaceous unit. It typically develops around adrenarche in association with an increase in androgen mediated sebum production. Over the last decade, it has been recognized that acne is a chronic condition (*Thiboutot et al., 2009*).

The peak age of onset for acne is 16–19 years in boys and 14–17 years in girls. Seventy percent of cases resolve after 5 years of onset but in some cases, acne will either persist until 20–30 years of age or present for the first time well after teenage years (*Williams and Layton, 2006*).

Although acne is principally a disorder of adolescence, the prevalence of adult patients with acne is increasing. Adult acne has been traditionally defined as presence of acne beyond the age of 25 years (*Goulden et al., 1997*).

There are two types of adult acne; persistent acne and late onset acne. Adolescent acne persisting beyond the age of 25 years is called persistent adult acne and acne developing for the first time after the age of 25 years is called late onset adult acne. Both types are more common in women (*Dumont-Wallon and Dreno, 2008*).

Late onset acne can be further subdivided into; 1-Chin acne either as chronic inflammatory acne distributed on