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STUDY OF NON-NEOPLASTICLESIONS OF SKIN

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Abstract. The diversity of skin lesions makes it mandatory to classify the them accurately by histopathological features following universally accepted classification. histopathological study of 166 cases of non-neoplastic was undertaken in the Department of Pathology, Dr.PSIMS &RF, Gannavaram to know the occurrence of different types of ovarian lesions and was correlated with other studies. Histopathologically, lesions were classified into non-neoplastic lesions. Out of total 166 skin lesions, 100 cases were non-neoplastic lesions among which infectious diseases of the skin were the most common comprising of 27 cases amounting to 27%% of non-neoplastic lesions. Skin lesions constitute a large and significant proportion of cases. Due to its complex structure, skin lesions are of diverse histological types. The diversity of skin lesions makes it mandatory to classify the them accurately by histopathological features following universally accepted classification. The diagnosis of skin lesions presents unique difficulties, in part, related to the wide variety of lesions and the complicated nomenclature. The present study emphasizes the various patterns of skin lesions in this geographic location in and around Krishna district. Finally the quintescence of the subject of study of skin lesions is it's vastness, it's enormity and its interesting histomorphology

INTRODUCTION

Morphological Diagnosis of skin lesions is problematic due to the large variety of tumors and tumour like lesions and their variant forms[1], the uncommon occurrence of some of the lesions[1], the frequency of differentiation along two or more cell lines in the same tumor and the complicated nomenclature[1]. Most lesions are benign and if completely excised, cause no further concern[2].Skin lesions constitute a large and significant proportion of cases. Due to its complex structure, skin lesions are of diverse histological types. The diversity of skin lesions makes it mandatory to classify the them accurately by histopathological features following universally accepted classification. He diagnosis of skin lesions presents unique difficulties, in part, related to the wide variety of lesions and the complicated nomenclature. The present study emphasizes the various patterns of skin lesions in this geographic location in and around Krishna district. Finally the quintescence of the subject of study of skin lesions is it's vastness, it's enormity and its interesting histomorphology. The non-neoplastic lesions of skin can be divided into the following subtypes:

SPONGIOTIC DERMATOSES/ ECZEMATOUS TISSUE REACTIONS[12]

They are characterized by

a. Parakeratosis
b. Spongiotic vesicles
c. Exocytosis of mononuclear cells
d. Dilated blood vessels in the epidermis
e. Edema and perivascular mononuclear infiltrate in the upper dermis

However the need for analysing these lesions arises due to the following considerations[2].

1. Awareness of the morphology of skin lesions will contribute to a right diagnosis and can help to avoid potential pitfalls.
2. Clinical associations with specific subtypes will not become apparent if the lesions are not subtyped. Accurate subclassification is therefore an aid to future epidemiological and histological studies.[2]
3. A review of English literature highlights the complexity in the understanding of skin lesions. Further this literature pertains chiefly to the Western population; with a few Indian studies in between.[3] In view of this it is essential to study lesions to define their incidence, morphologyclinical association especially with regard to the Indian population.

Hence the proposed study was undertaken to analyse the histopathology of skin lesions and classify them, as well as to correlate specific subtypes with the clinical profile so as to address the concerns raised above.

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AIMS AND OBJECTIVES

To study and analyze the histopathological changes in non-neoplastic lesions of skin.
To study the incidence of various non-neoplastic lesions of skin.

MATERIALS AND METHODS

SOURCE OF DATA:

All the biopsies, specimens and reference materials submitted to the Department of Pathology, Dr. PSIMS& RF for histopathological study during the period from November 2009 to October 2014 (Two and half year retrospective and Two and half year prospective study)
The retrospective study includes all the cases from Nov 2009 to April 2012.
The prospective study is from May 2012 to Nov 2014.
Data for retrospective study is obtained from departmental records, tissue blocks and slides.
Data for prospective study is obtained from clinical records and tissue specimens.

METHODS OF COLLECTION OF DATA:

Clinical data is obtained from hospital records and tissue specimens received in the department All the biopsies were punch biopsies measuring 4-5mm, obtained in 10% formalin and fixed for 12-36 hours. Gross morphology was assessed. Tissues were processed and embedded in paraffin blocks. Sections of 4-5 microns were cut and stained with haematoxylin & eosin. Special studies were done wherever necessary. Microscopic analysis will be done under light microscope with detailed study of the morphology of non-neoplastic and neoplastic lesions. A detailed description of the complete morphology was given.The pattern of skin and adnexal lesions was analyzed.
The results were tabulated and compared with available literature, lesion wise. Proforma and master chart were enclosed. Bar charts and pie-diagrams were given wherever needed. Copies of the informed consent enclosed were submitted. (for prospective study)

INCLUSION CRITERIA:

All lesions of epidermis along with melanocytic lesions, dermis and lesions of skin appendages without restricting the study to a particular age limit.

EXCLUSION CRITERIA:

i. Mesenchymal tumours of dermis
ii. Skin secondaries
iv.Vascular tumours of dermis

ETHICAL CLEARANCE:

Ethical clearance has been obtained from Ethical
Committe of Dr.PSIMS& RF.

STATISTICAL METHODS APPLIED:

Following statistical methods were applied in the present study.
1. Number and percentage
2. Descriptive statistics.

RESULTS

During the period of 5 years from November 2009 to October 2014, there were 166 cases which presented as skin lesions and out of these, 100 happened to be non-neoplastic, i.e 60.2% and 66 neoplastic, i.e 39.7%. Out of the 66 neoplastic lesions, 38 were found to be benign tumours and 28 malignant; i.e 22.8% and 16.2% respectively.

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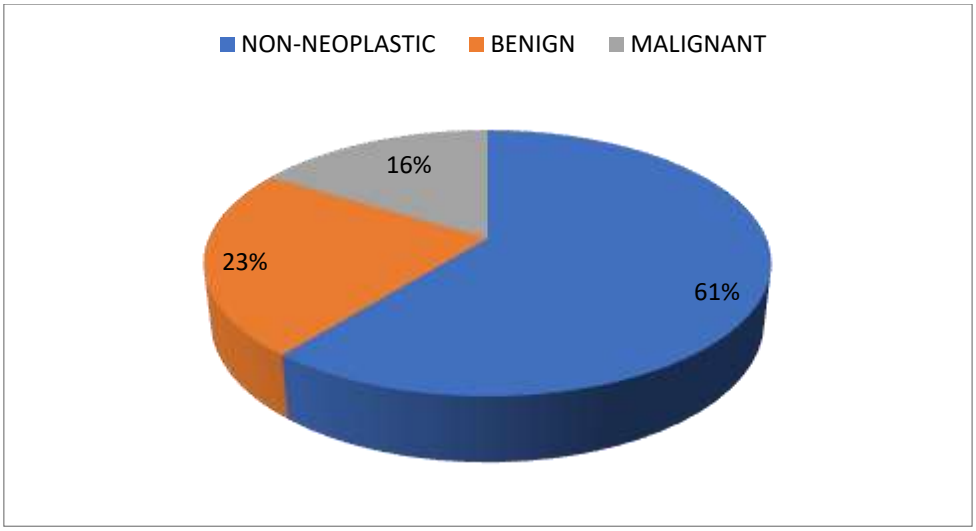

Fig. 1 DISTRIBUTION OF ALL SKIN LESIONS

The ratio of non-neoplastic lesions to neoplastic lesions = 1.55:1
The ratio of benign to malignant lesions = 1.4:1

TABLE 5.INCIDENCE OF NON-NEOPLASTIC LESIONS

TYPE OF LESION	NO.OF CASES	INCIDENCE PER ALL NON-NEOPLASTIC LESIONS	INCIDENCE PER TOTAL NO.OF CASES STUDIED
Genodermatoses	7	7%	4.2%
Papulosquamous	21	21%	12.6%
Vesiculobullous	16	16%	9.6%
Connective tissue	8	8%	4.8%
Infectious	27	27%	16.2%
Non-infectious inflammatory	10	10%	6.0%
Cysts	4	4%	2.4%
Others	7	7%	4.2%
Total	100	100%	60.2%

Infectious diseases were the largest group in the non-neoplastic category comprising 27 cases which accounted to 16.2%.

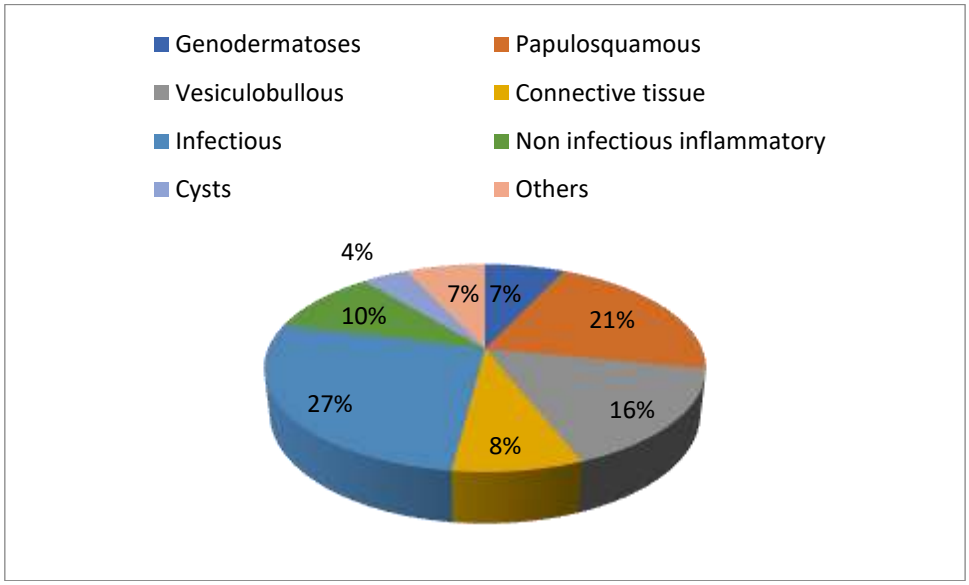

Fig.2 DISTRIBUTION OF NON-NEOPLASTIC LESIONS

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Out of all the non-neoplastic lesions, the most common lesions were the infections comprising 27%, followed by papulosquamous comprising 21% and vesiculobullous lesions comprising 16%.

TABLE6. AGE INCIDENCE OF NON-NEOPLASTIC LESIONS

LESION **AGE IN YEARS**	1-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89
GENODERMATOSES	2	1	-	3	1	-	-	-
PAPULOSQUAMOUS	3	4	3	5	3	2	1	-
VESICULOBULLOUS	-	3	2	1	3	7	-	-
CONNECTIVE TISSUE	1	2	1	3	1	-	-	-
INFECTIOUS	1	1	7	8	3	3	2	2
NON-INFECTIOUS INFLAMMATORY	1	1	5	1	-	2	-	-
CYSTS	-	4	-	-	-	-	-	-
OTHERS	-	3	2	1	-	1	-	-

All the categories almost showed peak age incidence in 40-49yrs group except non-infectious inflammatory lesions which were common in 30-39 yrs group and cysts in 20-29 yrs group.

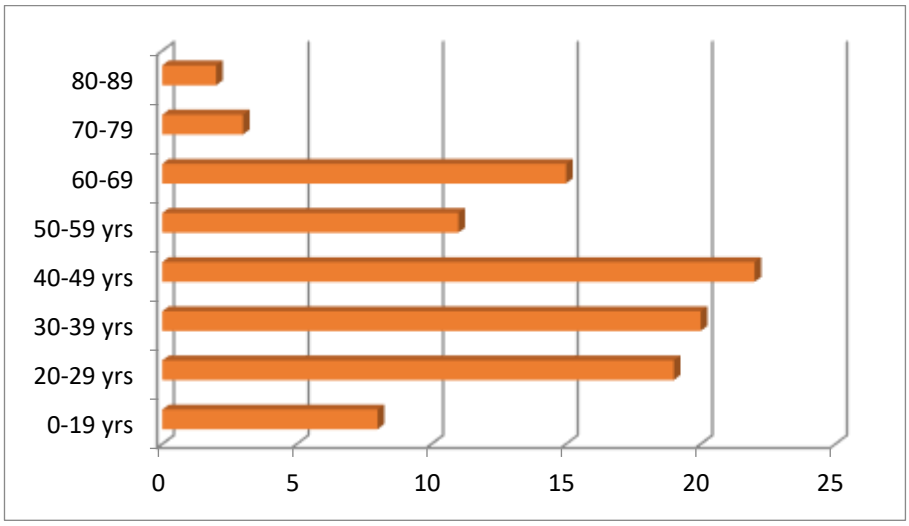

Fig.3 AGE DISTRIBUTION IN NON-NEOPLASTIC LESIONS

In the present study peak age incidence is between 40-49 years seen in 25 cases, accounting to 25%

TABLE 7.SEX DISTRIBUTION IN NON-NEOPLASTIC LESIONS

	NUMBER OF CASES	INCIDENCE
MALES	56	56%
FEMALES	44	44%
TOTAL	100	100%

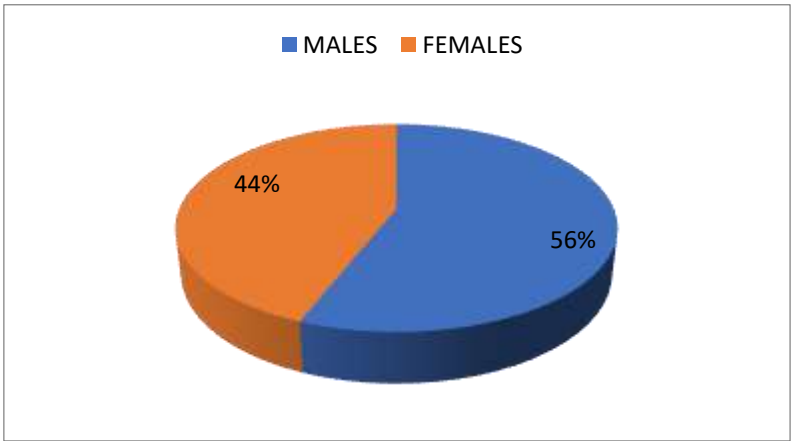

Fig.4 SEX DISTRIBUTION IN NON-NEOPLASTIC LESIONS

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In the present study the incidence of non-neoplastic lesions in males is greater i.e 56% than in females which is 44%.

TABLE 8.DISTRIBUTION OF NON-NEOPLASTIC LESIONS

TYPE	LESION	NO.OF CASES	INCIDENCE
Genodermatoses	Darriers disease	2	1.2%
	Epidermolysis bullosa	1	0.6%
	Icthyosis vulgaris	1	0.6%
	Acrokeratosisverruciformis	1	0.6%
	Hailey-Hailey disaese	1	0.6%
	Erythrokeratodermavariabilis	1	0.6%
Papulosquamous	Lichen planus	6	3.6%
	Psoriasis	5	3.0%
	Pityriasis rosea	3	1.8%
	Pityriasis lichenoid chronicus	1	0.6%
	Chronic lichenoid eczema	1	0.6%
	Prurigo nodularis	1	0.6%
	PLEVA	1	0.6%
	Lichen sclerosusatrophicus	1	0.6%
	Prurigo simplex	1	0.6%
	Erythema annulare	1	0.6%
Vesiculobullous	Pemphigus vulgaris	4	2.4%
	Bullous pemphigoid	4	2.4%
	Erythema multiformae	2	1.2%
	Lichen simplex chronicus	2	1.2%
	Subcorneal pustular dermatoses	1	0.6%
	Drug induced bullous lesions	1	0.6%
	Linear IgA dermatitis	1	0.6%
	Subacute spongiotic dermatitis	1	0.6%
Connective tissue	DLE	5	3.0%
	Morphea	2	1.2%
	Lupus erythematosus	1	0.6%
Infectious	Hansen’s	22	13.2%
	Actinomycoses	2	1.2%
	Toxic shock syndrome	1	0.6%
	Tineaungum	1	0.6%
	Granulomatous inflammation	1	0.6%
Non-infectious inflammatory	Granuloma annulare	3	1.8%
	Non-specific dermatitis	1	0.6%
	Folliculitis	2	1.2%
	Neutrophilic vasculitis	1	0.6%
	Urticarial vasculitis	1	0.6%
	Keratosis pilaris	1	0.6%
	Pseudopalade of Brocq	1	0.6%
Cysts	Epidermoid cysts	1	0.6%
	Trichilemmal cyst	1	0.6%
	Infundibular keratin cyst	1	0.6%
	Steatocystoma multiplex	1	0.6%
Others	Lichen amyloidosis	4	2.4%
	Phrynoderma	1	0.6%
	Hidradenitis suppurativa	1	0.6%
	Postinflammatory hypopigmentation	1	0.6%

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In the present study among the genodermatoses Darrier's disease was the commonest accounting to 1.2%. Lichen planus was the commonest accounting to 3.6%. the most common lesions in each entity were Pemphigus vulgaris(2.4%), DLE(3.0%), Hansen's disease(13.2%) etc. Cystic lesions showed no specific predilection to any subtype.

DISCUSSION

NON-NEOPLASTIC LESIONS

PAPULOSQUAMOUS LESIONS

Lichen Planus

6 cases of Lichen Planus constituted 3.6% of the study. Multiple lesions with papules and plaques with a violaceous hue were seen in all the cases. Similar findings have been reported by Boyd et al[77].

1 case of hypertrophic lichen planus seen in our study presented with pruritic patches over the lower limbs. Similar findings have been recorded by Weedon et al[78].

Lichen plano pilaris presented as localized pruritic patches over the scalp. This lesion as described by Matta M et al is generally a scalp lesion[78].

One case of Pitryasislichnoidchronica seen. The lesions were scaly papules, few with plaques located mainly on the trunk and extremities. The papules were erythematous some with pruritic tinge. These observations are consistent with those of Oliva Benmaman[78] et al.

Histopathological observations

The epidermis in Lichen Planus showed hyperkeratosis, hypergranulosis andirregular acanthosis in almost all cases. This conforms to the findings reported by Boyd[77] et al. Civatte bodies were seen in 30%. Ellis[79] et al have reported an incidence of 37-100%. A moderate to severe band like lymphoplasmacytic infiltrate with basal cell vacuolation was seen in all the cases. These observations correspond to the report by Ellis[79]et al.

The cases of hypertrophic lichen planus showed psoriasiform hyperplasia of the epidermis, dermal infiltrate near the tip of the rete ridges and vertically oriented collagen fibers in the papillary dermis. Similar findings have been recorded by Weedon[78] et al.

Lesions of Lichen Planopilaris showed lichenoid reaction pattern involving the basal layer of follicular epithelium with perifollicular lymphocytic infiltrate. Similar observations have been reported by Matta M[78] et al.

The case of Pityriasis lichenoid chronica showed hyperkeratosis, parakeratosis in some of the patients, focal areas of spongiosis, interface change of the dermo-epidermal junction, superficial perivascular band like lympho-histiocytic infiltrate and extravasation of RBC's These findings compare well with the observations of Oliva Benmaman[78] et al.

VESICULOBULLOUS LESIONS

Pemphigis vulgaris

Pemphigus vulgaris accounted for 4 cases, which constituted the largest group in the present study.

TABLE14. COMPARISON OF INCIDENCE OF PEMPHIGUS VULGARIS

STUDY	INCIDENCE	MEAN AGE(in yrs)	M:F RATIO
Md Nurul Amin and Maidul Islam AZM[80]	72%	35	1.3:1.69
Soner Uzun, Murat Durgu[81] et al	83%	43	1:1.4
Basheer A Adam[82]	60%	45	1:1
Present study	25%	40	1:1.5

Histological Observations

In most of the cases, bulla was seen in the suprabasal region (3 cases – 75%). Mid epidermal bulla was seen in 1 case (25%). Acantholysis was seen in all cases. Eosinophilic spongiosis was seen in 1 case (25%) and a row of tombstones in 2 cases (50%). Inflammatory infiltrate in the bullous cavity was seen in 2 cases (50%).

Bullous pemphigoid

Bullous pemphigoid was the second most common disorder in this group.

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TABLE15. COMPARISON OF INCIDENCE OF BULLOUS PEMPHIGOID

STUDY	INCIDENCE	MEAN AGE(in years)	M:F RATIO
Arti Nanda, Richard Dvorak et al[83]	40%	40	1:3
Basheer A Adam[82]	35%	42	1:2
Present study	25%	45	1:1.5

Histological observations

Subepidermal bulla was seen in all the cases. Inflammatory cell infiltrate was rich in 2 cases and poor in 2 cases (50% each). Perivascular infiltration was observed in 3 cases (75%). Inflammatory cell infiltrate mainly composed of eosinophils with few lymphocytes.

Erythema multiforme :

All the four patients with Erythema multiforme had localized erythematous plaques over the extremities. Similar findings have been reported by Le Boit PE[84].

Histological observations

All the four cases showed hyperkeratosis, basal cell vacuolation, civette bodies, moderate to severe inflammatory infiltrate in the dermis. Subepidermal vesiculation was seen in the 2 of the 4 cases. This conforms well with the observation of Le Boit PE[84].

DLE

Of the 5 patients with DLE 3 patients (66%) had localized cutaneous involvement of the head and scalp, and 2 patients (33%) had generalized form. These observations compare well with those of Paolo Fabbri[85] et al.

Histological observations

All the cases of DLEhistopathologically showed hyperkeratosis, follicular plugging, variable degeneration of basal cells, some with civatte bodies, thickened basement membrane, pigment incontinence and perivascular, perifollicular mononuclear infiltrate of the dermis. Paolo Fabbri[85]et al have recorded similar findings.

Lichen sclerosus et atrohicus

1 case of lichen sclerosis et atrophicus was encountered, presented with grey white patches in the vulvar region, which concurs with findings of Shirer[85] et al.

Histological observations

The case showed thinned out epidermis with hyperkeratosis, a wide band of homogenized collagen below the dermoepidermal junction and a lymphocytic infiltrate beneath the homogenized area. This correlated well with those of Hewitt[85] et al.

HANSEN'S DISEASE

Of the 166 patients in the present study, 22 (13.2%) patients were diagnosed with Hansen's disease with peak age incidence from 30-40 years and patients below 9 years were affected least. Similar observations were made by Kaur[86] et al which observed 4th decade as major age group.

Majority of the patients were males (14 out of 22), with a M:F ratio of 1.5:1, which is similar to findings made by above authors[87].

The most commonly encountered type of leprosy was BT with 7 cases (31.8%), second common type was LL with 6 cases (27.2%), next common was IL with 4 cases(18.18%) and BL was least encountered type with 1 case (4.5%), the finding similar to findings of other authors[88,89,90,91,92,93].

LICHEN AMYLOIDOSIS

4 cases of Lichen amyloidosis seen in our study, M:F ratio being 1:1, with waxy papules in generalized manner similar to findings similar to findings by Weedon[85] et al.

Hisological observations

All cases showed irregular acanthosis of the epidermis. Small globular deposits of eosinophilic hyaline material in the papillary dermis was seen in all the cases. These findings confirmed with those mentioned by Weedon[85] et al.

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SUMMARY AND CONCLUSION

1. A histopathological study of 166 cases of non-neoplastic was undertaken in the Department of Pathology, Dr.PSIMS&RF, Gannavaram to know the occurrence of different types of ovarian lesions and was correlated with other studies.
2. Histopathologically, lesions were classified into non-neoplastic lesions.
3. Out of total 166 skin lesions, 100 cases were non-neoplastic lesions among which infectious diseases of the skin were the most common comprising of 27 cases amounting to 27%% of non-neoplastic lesions.

Skin lesions constitute a large and significant proportion of cases.Due to its complex structure, skin lesions are of diverse histological types. The diversity of skin lesions makes it mandatory to classify the them accurately by histopathological features following universally accepted classification. The diagnosis of skin lesions presents unique difficulties, in part, related to the wide variety of lesions and the complicated nomenclature..

The present study emphasizes the various patterns of skin lesions in this geographic location in and around Krishna district. Finally the quintescence of the subject of study of skin lesions is it's vastness, it's enormity and its interesting histomorphology.

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