CD123 positive Plasmacytoid Dendritic cells & Cutaneous Lupus Erythematosus (LE)

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INTRODUCTION

- Cutaneous LE – an autoimmune inflammatory dermatosis affecting skin & subcutaneous tissue

- Histologically- B & T cells, macrophages in perivascular & adnexal area with interface dermatitis

- Plasmacytoid dendritic cells (PDCs) are often associated with LE producing interferons and CD123 antigen and are linked to symptoms

- Identification of PDCs – ? diagnosis value
AIMS AND OBJECTIVES

- To review cutaneous LE at our centre
- To assess diagnostic value of CD123 staining PDCs in CLE
MATERIALS AND METHODS

- CLE diagnosed at Charing Cross Hospital between 2013 & 2017 were reviewed with respect to histology & immunofluorescence (IMF)

- Immunohistochemistry (IHC) to CD123 was performed & semi-quantitative criteria were developed for assessing staining intensity & patterns of distribution
SEMII-QUANTITATIVE CRITERIA FOR ASSESSMENT

Intensity of staining

- **Weak**: 1+
- **Strong**: 2+
SEMI-QUANTITATIVE CRITERIA FOR ASSESSMENT

Number of clusters

1 +
• 1-2 cluster involvement

2+
• 3-5 cluster involvement

3+
• > 5 clusters
**SEMI-QUANTITATIVE CRITERIA FOR ASSESSMENT**

Overall score generated

<table>
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<th>≤3</th>
<th>≥4</th>
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<td>• Low expression</td>
<td>• High expression</td>
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H&E stained sections of CLE

Section showing moderate perifollicular lymphoid infiltrate

Section showing moderate perifollicular and perivascular lymphoid infiltrate
RESULTS: Positivity based on staining intensity

- A total of 81 cases of CLE were identified

- 72/81 (88%) cases stained for CD123

- 45/72 (62%) – 2+
- 27/72 (38%) – 1+
RESULTS: proportion of cells

- 26/72(36%) – 3+
- 20/72 (28%) – 2+
- 26/72(36%) – 1+
CD123 STAINING

1+ distribution with weak staining

2+ distribution with strong staining
3+ distribution with strong staining
RESULTS: OVERALL SCORE/EXPRESSION

- 28/72 (39%): Low expression
- 44/72 (61%): High expression
RESULTS

- CD123 positive PDCs were distributed in perivascular, perifollicular, superficial dermal and deep subcutis

- Predominantly noted in perivascular 56/72 (78%)
RESULTS: CASES WITH IMF DATA

- IMF available in 34/81 cases (42%). 47/81 (58%) no IMF

- 12/34 (35%) cases - positive for IgG and C3, 22/34 (65%) – IMF negative

- 19/22 (86%) with negative IMF were positive for CD123
Key Points

- High concordance between histologically diagnosed CLE and CD123 staining;

- Predominantly high overall score (61%)

- Good diagnostic utility: CD123 staining present even in cases lacking IMF to support histological diagnosis (81% (38/47))

- Helps in the distinction of lupus from other neoplastic lymphoid proliferations
REFERENCES


THANK YOU