# Abstract: P885

# Title: SOLITARY PLASMACYTOMA: SINGLE INSTITUTION EXPERIENCE AND SYSTEMATIC REVIEW AND META-ANALYSIS OF CLINICAL OUTCOMES

**Abstract Type: Poster Presentation**

**Session Title: Myeloma and other monoclonal gammopathies - Clinical**


**Background:**

Solitary plasmacytomas are rare plasma cell neoplasms located in bone or extramedullary sites. Information on risk factors affecting disease-free survival (DFS) and survival outcomes is lacking.

**Aims:**

To report the DFS of a large cohort of plasmacytoma patients and establish risk factors for earlier progression.

**Methods:**

We conducted a retrospective study on 147 patients with plasmacytoma seen at the Mayo Clinic (January 1$^{st}$, 2005 – June 30$^{th}$, 2022). Our primary outcome was DFS, measured from the date of diagnosis to plasmacytoma recurrence or progression to multiple myeloma. We also performed a systematic review (1960 - 2022) and meta-analysis of 62 studies and 3487 patients with solitary plasmacytomas. Forest plots were constructed for each meta-analysis to examine and display study-level data using the random-effects model.

**Results:**

The median age at diagnosis was 60.7 years (range: 15.4 - 83.6). Patients with up to 10% clonal plasma cells in the bone marrow (plasmacytoma +, N=72) were older than those with a true solitary (N=75) plasmacytoma (63.5 vs. 56.2 years, $p<0.05$). The plasmacytoma + patients had significantly shorter median DFS (15.7 vs. 79 months, $p<0.05$) than those with true solitary plasmacytoma. The 3, 5, and 10-year DFS rates were 31%, 20%, and 6% for patients with plasmacytoma + and 64%, 53%, and 40% for patients with solitary plasmacytoma, respectively. In univariate analysis, clonal plasma cells in the marrow were a significant risk factor for a shorter time to progression (HR= 2.9). In subgroup analysis for patients with plasmacytoma +, a DFLC> 5 mg/dl (HR= 1.9) and a positive urine immunofixation (HR= 3.4) were the only significant risk factors for earlier progression. In contrast, for solitary plasmacytoma, only a DFLC>5 mg/dl (HR= 2.7) retained significance.

In the meta-analysis, most patients were male (66.1%) with a median age of 58 years and a tumor size of 4.9 cm. Radiation therapy was the main treatment, with 90.6% receiving it alone or in combination with other therapies. The objective response rate was 92.6%, with a 3-year DFS rate of 66.9%, 5-year DFS of 55%, and 10-year DFS of 42.1%**.** The 5-year overall survival (OS) rate was 79.6%, and the 10-year OS rate was 64.7%. There was a significant difference in the 5-year DFS rate between patients with bone plasmacytomas (51.1%) and extramedullary locations (69.8%), $p<0.01$**.** The OS was numerically shorter in patients with bone plasmacytoma than with extramedullary plasmacytoma, respectively (76.7% vs. 81% at 5 years and 61% vs. 70.1% at 10 years, p=NS).

**Summary/Conclusion:**

The study provides important insight into survival outcomes and risk factors for plasmacytoma patients and highlights the importance of comprehensive disease staging at diagnosis.

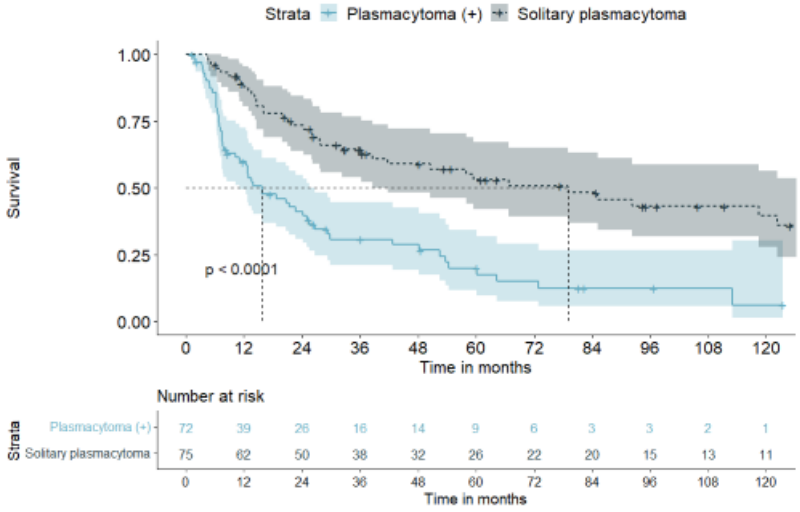


**Figure 1. Disease-free survival (DFS) in patients with plasmacytoma (+) vs. true solitary plasmacytoma in the Mayo cohort.**

**Keywords:** Multiple myeloma, Bone disease, Progression