BACKGROUND

Our work seeks to analyze whether the quantification of different angiogenic markers such as: Angiopoietin 1 (Ang1), Angiopoietin 2 (Ang2) and interleukin 6 (IL6) in patients recently diagnosed with multiple myeloma (MM), has some relationship with the biological and clinical parameters most evaluated, and their possible impact on progression-free survival (PFS) and overall survival (OS).

OBJECTIVES

Determine if there is any relationship between the quantification of the angiogenic markers, the clinical-biological characteristics of patients at the time of diagnosis, and the relationship between angiogenic markers, OS and PFS.

METHODS

We performed a prospective and observational study at the Hematology service of the Arnau of Vilanova University Hospital of Lleida (Spain). The research data were collected through the review of the clinical history of 62 selected patients, to identify the biological association between the angiogenic biomarkers and the routinely tests used in the diagnosis. The inclusion period was between 2014 and 2019. Likewise, 20 subjects without known hematological pathologies were selected for our investigation.

RESULTS

- In those cases, in which Ang1 is elevated, Ang 2 generally decreases (p =0.020).
- We calculated a mean PFS of 24.8 months (15.0-34.5 months, 95%CI) for those with a Ang1/Ang2 ratio <6. And for who presented a ratio > 6, a mean of 48.2 months (40.2-56.1 months, 95%CI), p = 0.019.
- Likewise, a significant statistical value (p = 0.009) was observed with a median OS for patients with an Ang1/Ang2 ratio > 6, 63.3 months (55.6-71.0 months, 95%CI) and for those with a ratio < 6 was, 39.3 months (28.6-49.9 months, 95%CI).

- In the multivariate analysis, the Ang1/Ang2 ratio did not reach a statistical value that would highlight its role as an independent prognostic variable for PFS. On the other hand, with respect to OS, it was observed that this variable stood out as an independent prognostic factor in relation to age and sex in patients with MM, p = 0.032.

CONCLUSIONS

- The Ang1/Ang2 ratio quantified at the time of MM diagnosis is an independent prognostic factor related to OS, mainly associated with variables such as age and sex (p = 0.032).
- An inverse and statistically significant association were observed between Ang1 and Ang2. We could observe that in the case of Ang2 its production increases, mainly, in those cases in which the disease is present. Unlike Ang1 levels that are decreased.
- The MM continues being an incurable pathology. For this reason, the identification of subgroups of patients with the use of specific biomarkers for angiogenic activity, could offer relevant information on the possible evolution of these patients.