1. **Preferential activity of *Petiveria alliacea* extract on primary myeloid leukemic blast.**

**Global Use of Natural Products in Cancer Patient Management**

**Background:** Acute leukemia (AL) has a low overall survival (OS), largely associated with resistance to treatment. The need for new therapeutic approaches to improve the response in AL, either by directing therapy or with new therapeutic alternatives has been a research and clinical interest topic.

**Aim:** A cytotoxicity evaluation of *Petiveria alliacea* (Anamu) and *Caesalpinia spinosa* extracts was carried out in a sensitivity ex-vivo platform that used primary leukemia cells from patients with AL.

**Methodology:** Bone marrow samples were taken from 26 patients with novo AL and 6 in relapse, and the cytotoxicity of the extracts alone or in combination with the chemotherapeutics (chemo) was evaluated by XTT. The IC50 was calculated for each individual treatment and for the combination with extracts and chemo.

**Results:** Patients were classified as good (GR) and bad responders (BD) according to the ex-vivo test. 70.5% of the GR patients to the ex- vivo test, achieved post-induction remission to induction chemo with a median OS of 12.50 months versus 7.23 months in BR. Furthermore, it was found that the ex-vivo response to extracts and chemo is heterogeneous and shows an exclusive pattern between the extracts, being Anamu the more effective in inducing cell death. The combination of extracts with chemo agents showed synergistic or antagonistic effects in the patients’ blasts.

**Conclusions:** On the developed platform for evaluate the ex-vivo response to chemotherapy and extracts, the Anamu extract seems to have a greater response in AML and on the cells of those patients resistant to induction therapy. The platforms results are correlated with the response to induction and to the OS. These analyzes would allow establishing a system to predict response to treatment and determine ex-vivo susceptibility to new therapies under development, among them phytotherapeutics.

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