Leish115- **Efficacy of Photodynamic Antimicrobial Chemotherapy (PACT) to *Leishmania brasiliensis*: an in vitro study**

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Introduction: Leishmaniasis is a neglected tropical disease considered caused by parasites of the genus Leishmania. Affects about 12 million people in around 80 countries with 2 to 3 million cases per year. *Leishmania braziliensis* is the main species that causes cutaneous leishmaniasis in Brazil. Despite many achievements in research, the first-line chemotherapy is still based on antimonials, which are toxic and prone to the phenomenon of drug resistance. Despite recent advances in the understanding of the disease and promising programs for drug discovery, the treatment of leishmaniasis still remains a serious public health problem and the phenomenon of resistance to drugs is a major concern for the future. PACT is a potentially applicable technical, economical and safe, which has been used to treat cancer and other microorganisms. **Material and Methods:** The cytotoxicity evaluation of new PS through the technique of crystal violet, the concentrations determined safe (nontoxic) to animal cells. For PACT, semiconductor laser (λ = 660nm, 40mW, 4.2J/cm$_2$, CW) associated to phenothiazine's derivatives (5 and 10 µg/ml, TBO, Methylene Blue or Phenothiazine) on the promastigotes form of *Leishmania braziliensis* in a single session was used. Viability of the parasites was assessed in quadruplicates of each group. The samples were removed and analyzed in a haemocytometer 72h after PACT. We found an important decrease in the number of viable parasites on all treated groups in comparison to their controls. **Results:** We found an important decrease in the number of viable parasites on all treated groups in comparison to their controls. The results of present study showed significant percentage of lethality (above 95%) of the protocol. The 99.23% of lethality was achieved with 10 µg/ml of TBO. No lethality was seen on groups treated neither with laser nor with each compounds separately. **Conclusions:** The results are promising and indicative that the use of PACT may be a powerful treatment of leishmaniasis when compared to already available ones. **E-mail:** arturfelipes@gmail.com