Nephroprotective activity of the enriched polyphenol extract of *Euterpe edulis* Martius

Ariele A. Venturini Polese[a]; Priscylla M. M.Cardoso[a]; Renata A. Mazuco[a]; Lucas S. D. Macedo[a]; Maria Eduarda de S. Barroso[a]; Waléria G. Baratella[a]; José A.Ventura[a], Elisangela F.Pimentel[a]; Thiago de M. C.Pereira[a], Denise C.Endringer[a].
[a]*Programa de Pós-Graduação em Ciências Farmacêuticas, Universidade Vila Velha, Vila Velha, Espírito Santo, Brazil.*
arieleventurini@hotmail.com.

The contrast nephropathy is directly related to increased morbidity and mortality, which is the third leading cause of kidney failure in hospitals. The treatment and prevention may be done by administering antioxidant products[1]. The juçara palm (*Euterpe edulis* Martius*)* is a native plant of the Atlantic Forest, which is widely used for food consumption. The fruits of *E. edulis* present phenolic compounds known for their antioxidant activity. This study evaluated the nephroprotective effect of the pulp of the fruit of *E. edulis* in an animal model of contrast-induced nephropathy[2]. The fruits were collected and subjected to pulping quantification of total polyphenols by a colorimetric method, for anthocyanins pH differential method and evaluation of the antioxidant activity by the DPPH (2,2-diphenyl-1-picryl-hidrazila) and ABTS assay (2, 29-azinobis (3-ethylbenzothiazoline-6sulfonic acid). The evaluation of the nephroprotective effect was determined using an induction contrast nephropathy by contrast iodate, evaluated by AOPP indicators (protein products containing cross-linking Dityrosina). Concentrations of creatine and urea were measured and a histological analysis was performed[3]. The determination of acute toxicity was performed according to the recommended by OECD 423 protocol. The results showed that the pulp of *E. edulis is* a source of polyphenols (811 ± 16.7 mg GAE / g) and anthocyanins (181.25 mg / 100 g). It has a strong antioxidant activity as identified by the DPPH method, with 3.4 AAI (antioxidant activity index) and technical ABTS (IC50 0.59 ± 0.03 mg / mL)[4]. In *in vivo* experiments, the pulp of *E. edulis* demonstrated a renal protection, decreasing renal dysfunction and morphological tubular lesions in mice after contrast nephropathy induction. Most probably those effects are resulting from the antioxidant activity promoted by polyphenols.

Keywords: nephroprotection; Euterpes edulis; polyphenols; anthocyanins; antioxidant activity.

References:
1. Santos, RO; Malvar, et al. Acta Médica Portuguesa. 2011; 5, 809-820.
2. Andreucci, M, et al. Biomed Research International 2014, 1-21.
3. Inácio, MRC, et al. Food Chemistry. 2013; 3-4, 1160-1164.
4. Scherer, R; Godoy, H T. Food Chemistry. 2009, 3, 654-658.

FINANCIAL SUPPORT

FAPES (#241/2016, # 08/2017); FAPES/SEAG (# 665/2016), CNPq (#401409/2014-7; #310680/2016-6)