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EVALUATION OF THE ANTIHYPERTENSIVE EFFECT OF THE AQUEOUS EXTRACT OF THE ROOTS OF DISSOTIS BRAZZEÏ COGN. AT THE WISTAR RAT

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ABSTRACT

Dissotis brazzeï Cogn is a plant frequently used by traditional Congolese medicine against high blood pressure. This study aims to evaluate the antihypertensive effect of the aqueous extract of the roots of Dissotis brazzeï Cogn in wistar rats. The acute toxicity of the extract was previously studied in mice. Therefore, 25 male Wistar rats were divided into five (5) groups of five (5) rats each and treated for 21 days. These groups were treated as follow: group 1 (distilled water); group 2 (an 8% wt NaCl solution), group 3 (NaCl 8% immediately followed by furosemide at 20 mg/kg; b.w.), group 4 and 5 (each of 8% NaCl followed immediately by the aqueous extract of the roots of *Dissotis brazzeï* Cogn. at respective doses of 250 and 500mg/Kg. Pharmacological tests showed a significant reduction in blood pressure and heart rate of rats made hypertensive by 8% NaCl. In addition, the hematological and lipid parameters evaluated showed a significant modification of parameters such as triglycerides and red blood cells. This extract did not modify the weight of noble organs at the used doses. Thus, the diuretic and antihypertensive effects of this extract would be justified by its secondary metabolites such as flavonoids and tannins.

KEYWORDS: Antihypertensive effect, *Dissotis brazzeï* Cogn., Rats, Nacl, Blood pressure.

1. INTRODUCTION

High blood pressure is one of the most frequently observed pathological conditions in older people (Ferrer et al, 2015; Guidelines Committee, 2003). It is defined in the population by blood pressure values greater than 140 mmHg for systolic blood pressure or greater than 90 mmHg for diastolic blood pressure (Hamza, 2018; Vesin et al., 2008). For many years, raising blood pressure was considered a beneficial physiological effect for maintaining good organ irrigation. However, large studies such as the Framingham Heart Study have demonstrated that high blood pressure is closely linked to greater morbidity and mortality in older people (Ferrer et al., 2015; Lloyd-Jones et al., 2005). It affects all races, all ethnic groups and all socio-professional strata and is unequally distributed across countries and continents (Okemy Andissa et al., 2020). It generally affects nearly 20% of the world population and more than 50% of those over 65 years old (Bio, 2015; MS, 2011). Despite the progress of modern medicine and the pharmaceutical industry in the management and development of synthetic drugs against high blood pressure, malaria, diabetes and diarrhea; the frequency and complications linked to hypertension still seem high (Okemy Andissa et al., 2020; Contegal et al., 2005; Anaes, 2001; Corraco et al., 1990). Hence around 80% of the African population continues to treat themselves with medicinal plants (Ngbolua, 2012). Ethnobotanical surveys have revealed that the Congo, as most African countries, is full of numerous medicinal plants used against various common non- transmissible diseases including high blood pressure (Etou Ossibi et al., 2016). The aim of this present study is to evaluate the antihypertensive activity of the roots of *Dissotis brazzeï* Cogn in rats.

2. MATERIALS AND METHODS

This study was carried out in the Pharmacodynamics and Experimental Pathophysiology laboratory (L2PE) of the Faculty of Sciences and Technology for pharmacological studies, and the laboratory of Plant and Life Chemistry Unit (UC2V) for the evaluation of blood pressure. Then, the biochemical and hematological analyzes were also carried out at the Laboratory of Biochemistry and Pharmacology (LBP) of the Faculty of Health Sciences of Marien NGOUABI University.

2.1. Plant material

The plant material consisted of the roots of *Dissotis brazzeï* Cogn. These roots were harvested in Kinkala's district, in the pool's department. Indeed, a sample of *Dissotis brazzeï*

Cogn leaves was identified and compared with reference sample No. 9177 from the national herbarium (2009) at the National Institute for Research in Exact and Natural Sciences (IRSEN) of Brazzaville City. After drying, the roots of *Dissotis brazzeï* Cogn were dried in the shade for two weeks at room temperature (28 ± 1°C) at the Laboratory of Pharmacodynamics and Experimental Pathophysiology (L2PE). After drying, they were pulverized using a mortar and the powder obtained served as plant material for various studies.

Figure 1. a) *Dissotis brazzeï* foot, b) *Dissotis brazzeï* roots.

2.2. Animal material

The study sample consisted of twenty-five (25) male rats of the Wistar strain weighing between 160 and 180 g and aged 18 to 19 weeks. They were provided and raised in the pet Shop of the Faculty of Sciences and Technology of Marien NGOUABI University, subjected to an ambient temperature of ± 25°C, with free access to food and tap water, benefiting from 12 hours of light and 12 hours of darkness.

Figure 2: Albino wistar rats.

2.3. Preparation of the aqueous extract

The aqueous extract was prepared by decoction by diluting 50 g of powder of *Dissotis brazzeï* Cogn roots in 500 mL of distilled water. The decoction obtained was then evaporated on a heating pitcher, and the dry extract obtained was used for pharmacological activities.

3.4. Pharmacological test

3.4.1. Induction of arterial hypertension and treatment of animals

Arterial hypertension was induced in Wistar rats following daily gavage of an 8% NaCl solution for 21 days. Indeed, the 8% NaCl solution was prepared by diluting 8 g of salt in 100 mL of distilled water. The antihypertensive effect of the roots of *Dissotis brazzeï* Cogn., was evaluated following the method described by Bassey et al. (2018). Hence, before the experiment, 25 male Wistar rats were divided into five (5) groups of five (5) rats each and treated for 21 days as follows: Group1 (negative control) received distilled water (1mL/100g; p.c.); group 2 (Positive control) received 8% NaCl solution (3ml/100g; b.w.) by oral administration; group 3 received 3mL of 8% NaCl immediately followed by furosemide (20mg/kg; b.w.); groups 4 and 5 received 3mL each of 8% NaCl followed immediately by the aqueous extract of the roots of *Dissotis brazzeï* Cogn., at respective doses of 250 and 500mg/Kg. The effects of the products on body weight, food and water consumption were noted on Day 0, Day 7, Day 14 and Day 21.

3.4.2. Evaluation of the effects of the aqueous extract of the roots of *Dissotis brazzeï* Cogn., on blood pressure and heart rate in rats made hypertensive by 8% NaCl

3.4.2.1. Animal preparation

Before proceeding with the exposure and catheterization of the femoral vein and the carotid artery, the rat was anesthetized by intraperitoneal injection of 15% ethyl carbamate (urethane) solution at a dose of 1.5 g. /kg; at a rate of 1 ml/100 g of animal body weight (Dimo et al., 2003).

3.4.2.2. Exposure and catheterization of the femoral vein

The anesthetized rat is placed in dorsal recumbency and fixed by all four legs using needles on a cork board. After depilation of the animal, a median and longitudinal incision in the skin of the inner side of the hip is made to identify the dark red femoral vein. The was carefully separated from other tissues, particularly the femoral artery and the sciatic nerve, then released and ligated downstream with a wire. A second ligature was prepared upstream to be able to fix the catheter. After hemisecting of the vein, a catheter was introduced into the

catheter, filled with 10% heparinized 0.9% NaCl solution, adapted to a syringe and held by the second ligature. Hence, the femoral vein was used to inject the rat with the different substances to be tested (Van Vliet et al., 2000; Nguelefack, 2008; Koffi et al., 2008).

3.4.2.3. Exposure and catheterization of the carotid artery

After hair removal from the rat's neck, a median and longitudinal incision in the skin was made and the trachea was released by separating the muscles. After identifying the thyroid glands, the carotids, recognizable by their opalescent wall, are located deep on either side of the trachea. One of the carotids was separated from the nerve fibers and exposed perfectly for approximately 2 cm. The 0.9% heparinized NaCl solution at 10% at a rate of 0.1 ml per 100 g of the rat's body weight, the role of which was to prevent blood coagulation in the rat's body, was injected from the catheterized femoral vein. A head ligation was performed and a waiting wire was placed under the artery. A vascular hemostatic clamp was placed as low as possible towards the heart behind the waiting line to block the flow of blood. Using a fine needle, a small breakthrough was made between the first ligature and the waiting wire, allowing the introduction of the free tip of a 24 G introcan catheter into the carotid artery towards the heart. The catheter was then held by the second ligature (Van Vliet et al., 2000; Nguelefack, 2008; Koffi et al., 2008).

3.4.2.4. Measurement of blood pressure and heart rate

The measurement of blood pressure and heart rate was assessed by the invasive or direct method (Santos, 2007). After exposure and then catheterization of the femoral vein and carotid artery of the rat, the animal fixed on the board was placed on the elevator. The clamp was then removed and the free end of the 24 G introcan catheter attached to the carotid artery was connected to the other catheter connected in turn to the transducer. The mechanical variations emitted by the rat's blood was captured and transmitted by the transducer (ultrasensitive blood pressure sensor) via the Biopac Student Lab MP 36 type recorder in electrical signals to the computer and visualized on the screen using the software Biopac Student Lab 3, 7 preinstalled.

3.4.2.5. Evaluation of the effects of the aqueous extract of the roots of *Dissotis brazzeï* Cogn. on the weight of the noble organs in the wistar rat

Following blood sampling, the rats were placed in supine position. Then, a dissection was carried out and the noble organs such as the heart, liver, kidneys and spleen were removed and then weighed.

3.5. Statistical analysis

The relative body weight of the rats (in %) was calculated as follows.

$$P = \frac{p_i}{p_o} \times 100 \quad (1)$$

With : P: relative body weight (%);

p_i: rat body weight (g) at t: any (g);

p_0:: body weight of rats at t_0 (g) .

The relative weight of the organs (%), was calculated as follows.

$$M = \frac{m}{m_o} \times 100 \quad (2)$$

With:

M: relative organ weight (%);

m: mass of the organ (mg);

m_0: weight of the animal (g) before sacrifice

The left ventricular index (LVI) was calculated according to the relationship.

$$IVG = \frac{m_c}{m_{VG}} \times 100 \quad (3)$$

With :

IVG: The left ventricular index;

m_c: mass of the heart (g);

m_{VG}: mass of the left ventricular (g).

The results obtained were analyzed using Excel software (Office 2013) and expressed as mean ± SEM. Then, the analysis of variance was used as well to compare the treated groups with the control group by applying the t-Student test. The significance threshold was set at $p < 0.05$.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Effect of the aqueous extract of the roots of Dissotis brazzeï Cogn. on the body weight of rats

Weekly weighing of the rats for three (3) weeks allowed us to follow the weight evolution of the rats in each group (Figure 3). This result shows that after 21 days (D) of treatment, the aqueous extract at a dose of 500 mg/Kg caused a significant drop in the body weight of the animals from D7 to D21 compared to those treated with 8% NaCl. While, those treated with

8% NaCl having received the extract at a dose of 250 mg/Kg showed an increase in body weight. However, furosemide caused a drop in weight from D7 to D14 and an increase from D14 to D2, as seen in Figure 3.

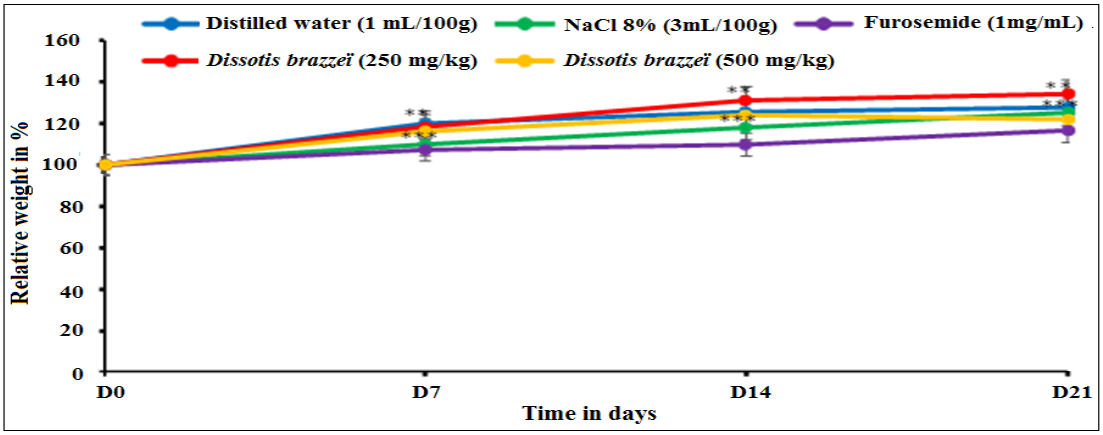

Figure 3: Weight evolution of rats as a function of time.

3.1.2. Effect of the aqueous extract of the roots of *Dissotis brazzeï* Cogn. on food consumption and water intake of rats

Figures 4 and 5 respectively show the effect of the aqueous extract on the variation of food and water consumption over time. It seems that from these figures food consumption is greater in rats treated with furosemide compared to those in the positive control group (NaCl 8%). On the other hand, the extract at the doses used does not influence the food consumption of rats compared to those treated with 8% NaCl. Furthermore, a significant water consumption was observed in rats treated with furosemide and the aqueous extract compared to the dose of 250 mg/Kg compared to those treated with 8% NaCl. Then, it is less significant in rats treated with the extract at a dose of 500 mg/Kg.

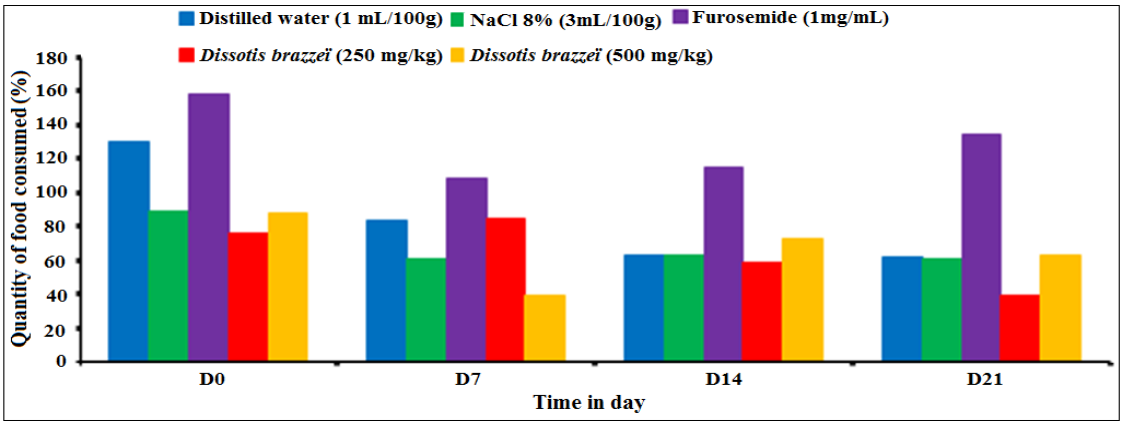

Figure 4: Variation in food consumption of rats as a function of time.

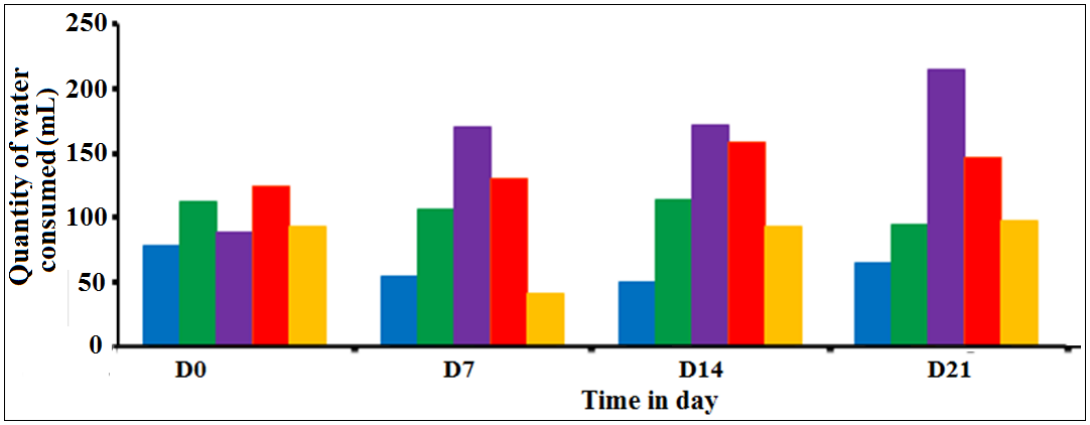

Figure 5: Variation in water consumption of rats as a function of time.

1.3. Effect of the aqueous extract of the roots of *Dissotis brazzeï Cogn*. on blood pressure and heart rate in wistar rats made hypertensive by 8% NaCl.

Figures 6 and 7 respectively show the effect of the aqueous extract of the roots of Dissotis brazzeï on the blood pressure and heart rate of the rats at the end of the experiment. It seems that from these figures, compared to the distilled water control, a significant increase in blood pressure and heart rate was observed in the rats having received 8% NaCl. Thus, just as furosemide, the aqueous extract of the roots of *Dissotis brazzeï* at the doses used (250 and 500 mg/Kg) significantly reduces these two parameters compared to rats made hypertensive by 8% NaCl.

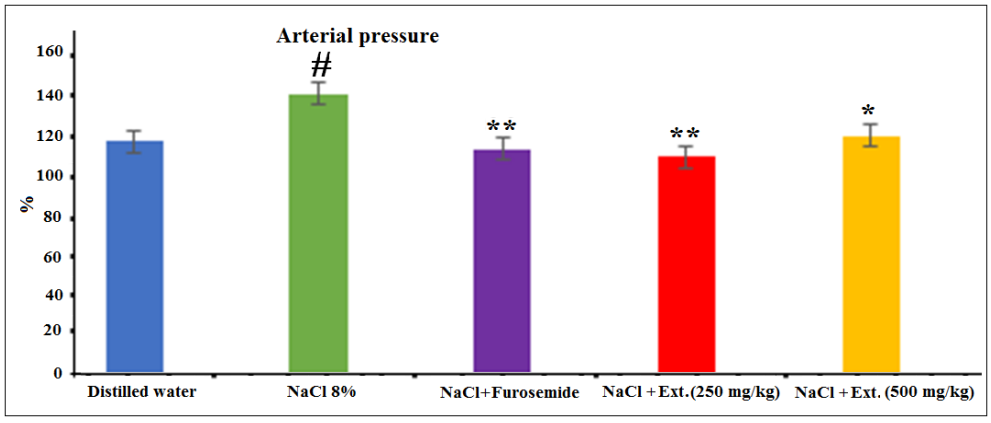

Figure 6: Effect of the aqueous extract of the roots of *Dissotis brazzeï* Cogn on blood pressure in wistar rats made hypertensive by 8% NaCl. #: significant (P<0.05) compared to the distilled water control; *: very significant (P<0.01) compared to the 8% NaCl control; **: highly significant (P<0.001) compared to the 8% NaCl control.

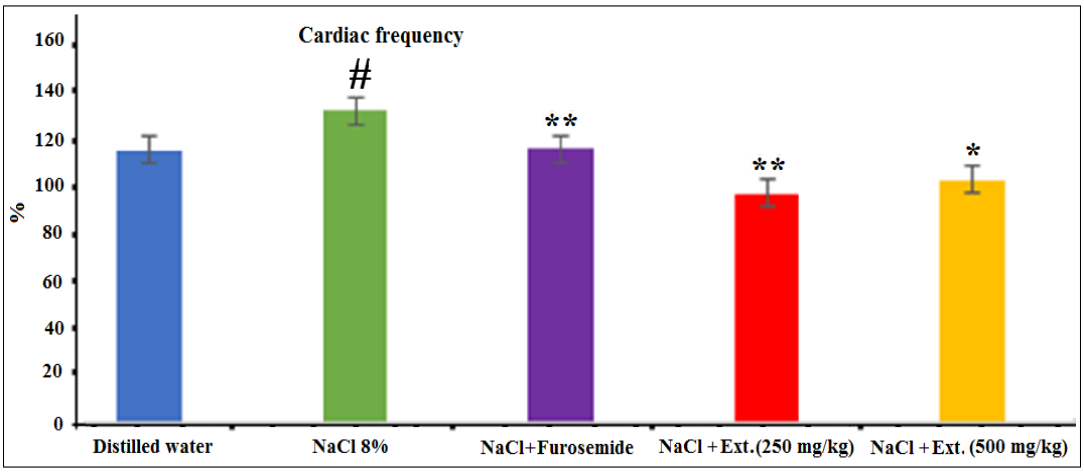

Figure 7: Effect of the aqueous extract of the roots of Dissotis brazzeï Cogn on heart rate in wistar rats made hypertensive by 8% NaCl. #: significant (P<0.05) compared to the distilled water control; *: very significant (P<0.01) compared to the 8% NaCl control; **: highly significant (P<0.001) compared to the 8% NaCl control.

3.1.4. Effect of the aqueous extract of the roots of *Dissotis brazzeï* Cogn. on hematological parameters in wistar rats made hypertensive by 8% NaCl

Table 1 shows the effect of the aqueous extract of the roots of *Dissotis brazzeï* Cogn. on the hematological parameters of the rats at the end of the experiment. The results obtained showed no significant change in the serum level of GR, THT, PLA and IDP of rats having received 8% NaCl compared to the distilled water control. On the other hand, a highly significant increase in the WBC level as well as a very significant decrease in the serum HB level was noted. Conversely, the aqueous extract at a dose of 500 mg/kg led to a significant reduction in the WBC level while no change in this parameter was observed at a dose of 250 mg/kg.

Table 1: Effect of the aqueous extract of the roots of *Dissotis brazzeï* cogn on the parameters hematological in the Wistar rat made hypertensive by 8% NaCl.

Par. H.	Treatments				
	ED (1mL/100g)	NaCl 8 % (3mL/100g)	Furosemide (20mg/Kg)	*D.brazzeï* (250mg/Kg)	*D.brazzeï* (500mg/Kg)
GB	0,60 ± 0,06	12,71 ± 0,41$^{###}$	6,53 ± 1,24^{ns}	12,48 ± 1,13^{ns}	**1,88 ± 0,72****
GR	6,95 ± 0,14	8,00 ± 0,14^{NS}	8,35 ± 0,58^{ns}	8,72 ± 0,43^{ns}	7,83 ± 0,42^{ns}
HB	38,03 ± 0,89	15,93 ± 0,32$^{##}$	15,9 ± 1,55^{ns}	16,2 ± 0,87^{ns}	15,93 ± 0,95^{ns}
THT	0,67 ± 0,01	0,85 ± 0,02^{NS}	1,31 ± 0,16^{ns}	1,07 ± 0,02^{ns}	1,13 ± 0,18^{ns}
PLA	882,33± 108,83	1181,66±65,54^{NS}	1598,33±170,60^{ns}	1434,66±60,06^{ns}	1473 ±145,58^{ns}
IDP	7,4 ± 0,05	9,33 ± 0,38^{NS}	11,9 ± 0,75^{ns}	10,43 ± 0,76^{ns}	9,9 ± 1,15^{ns}

Data are expressed as mean ± SEM with n = 5; NS: not significant compared to the distilled water control; ns (not significant) compared to the positive control (NaCl 8%); #: significant (P<0.05) compared to the distilled water control; ##: very significant (P<0.01) compared to the distilled water control; ###: highly significant (P<0.001) compared to the distilled water control; **: very significant (P<0.01) compared to the positive control (NaCl 8%); WBC: Red blood cell (106uL); GR: Red blood cell (106uL); HB: Hemoglobin (g/dL); THT: Hemoglobin content (%); PDI: Platelet distribution index (um2); ED: Distilled water.

3.1.5. Effect of the aqueous extract of the roots of *Dissotis brazzeï* Cogn. on lipid parameters in rats made hypertensive by 8% NaCl

The effect of the aqueous extract of the roots of *Dissotis brazzeï* Cogn. on the lipid parameters of the rats at the end of the experiment is represented in Table 2. It seems that from this table, in comparison with the positive control group (NaCl 8%), this extract significantly reduces the serum triglyceride level of rats treated at the doses used (250 and 500 mg/Kg). Also, at a dose of 500 mg/Kg this extract does not significantly increase the HDL-C level compared to rats made hypertensive by 8% NaCl).

Table 2: Effect of the aqueous extract of the roots of *Dissotis brazzeï* Cogn. on lipid parameters in rats made hypertensive by 8% NaCl

Lipids parameters	Treatments				
(mmol/mL)	ED (1mL/100g)	NaCl 8 % (3mL/100g)	Furosemide (20mg/Kg)	*D.brazzeï* (250mg/Kg)	*D.brazzeï* (500mg/Kg)
Cholesterol T	57,10 ± 9,00	64,21 ± 2,86^{NS}	56,00 ± 1,76^{ns}	35,54 ± 1,46^{ns}	63,07 ± 2,93^{ns}
HDL-C	46,02 ± 1,19	33,66 ± 1,59 ^{NS}	27,18 ± 1,04^{ns}	21,64 ± 2,33^{ns}	**43,99 ± 3,27^{ns}**
Triglycerides	46,50 ± 1,57	60,47 ± 1,16 ^{NS}	53,80 ± 1,72^{ns}	**26,94 ± 2,64***	**32,96 ± 1,33***

Each value is a mean ± SEM, with n = 5; * significant (P<0.05) compared to the positive control (NaCl 8%); NS: not significant compared to the distilled water control; ns: not significant compared to the positive control (NaCl 8%); HDL-C: HDL Cholesterol; Cholesterol T: Total cholesterol; ED: Distilled water.

3.1.6. Effect of the aqueous extract of the roots of Dissotis brazzeï Cogn. on the weight of noble organs in rats made hypertensive by 8% NaCl

Table 3 shows the effect of the aqueous extract of the roots of *Dissotis brazzeï* Cogn. on the weight of noble organs such as the heart, liver, spleen and kidneys of rats at the end of the experiment. However, no significant change in organ weights was observed in rats treated with this extract at the doses used (250 and 500 mg/Kg) compared to positive controls.

Table 3: Effect of the aqueous extract of the roots of *Dissotis brazzeï* Cogn. on weight noble organs in rats made hypertensive by 8% NaCl.

Organ weight	Treatments				
	ED (1mL/100g)	NaCl 8 % (3mL/100g)	Furosemide (20mg/Kg)	*D.brazzeï* (250mg/Kg)	*D.brazzeï* (500mg/Kg)
Heart (g)	0,84 ± 0,03	0,84 ± 0,04 ^{NS}	0,78 ± 0,04 ^{ns}	0,70 ± 0,04 ^{ns}	0,64 ± 0,03 ^{ns}
Left ventricle (g)	0,33 ± 0,02	0,30 ± 0,02 ^{NS}	0,27 ± 0,01 ^{ns}	0,25 ± 0,02 ^{ns}	0,22 ± 0,006 ^{ns}
IVG	260,16 ± 27,39	283,23±25,89 ^{NS}	294,35 ± 21,79 ^{ns}	288,36 ± 18,47 ^{ns}	287,13 ± 18,72 ^{ns}
Liver	6,68 ± 0,27	6,64 ± 0,31 ^{NS}	5,38 ± 0,43 ^{ns}	5,96 ± 0,54 ^{ns}	5,31 ± 0,41 ^{ns}
Missed	0,38 ± 0,02	0,31 ± 0,01 ^{NS}	0,27 ± 0,03 ^{ns}	0,27 ± 0,03 ^{ns}	0,036 ± 0,04 ^{ns}
Left kidney	0,70 ± 0,03	0,85 ± 0,06 ^{NS}	0,68 ± 0,03 ^{ns}	0,61 ± 0,03 ^{ns}	0,61 ± 0,02 ^{ns}
Right kidney	0,69 ± 0,04	0,80 ± 0,02 ^{NS}	0,71 ± 0,05 ^{ns}	0,64 ± 0,03 ^{ns}	0,64 ± 0,03 ^{ns}

Each value is a mean ± SEM, with n = 5; NS: not significant compared to the distilled water control; not significant compared to the positive control (NaCl 8%); IVG: Left ventricular index; ED: Distilled water.

3.2. DISCUSSION

The aqueous extract of the roots of *Dissotis brazzeï* Cogn. was the subject of a previous study by Taloulou in 2021. The results of this study were such that according to the Globally Harmonized Classification System (GHS). The aqueous extract of the roots of *Dissotis brazzeï* Cogn. is classified in category 5 of slightly toxic substances with an LD50 > 5000 mg/kg (OECD, 2001). Likewise, the phytochemical profile of this extract was also carried out, revealing the presence of tannins, free anthraquinones, saponosides, flavonoids, Oses - holosides and mucilages. Indeed, administering at doses of 125, 250 and 500 mg/Kg to normotensive rats, the aqueous extract of *Dissotis brazzeï* Cogn. roots led to an increase in the frequency of feces and urine. The latter suggests that this extract may have diuretic activity. It is with this vision that we proposed in the present study to evaluate the pharmacological effect of the roots of *Dissotis brazzeï* Cogn. on arterial hypertension in wistar rats. Thus, in the present study, the aqueous extract of the roots of *Dissotis brazzeï* Cogn. shows a significant decrease in the body weight of rats treated at a dose of 500 mg/kg unlike those treated with 8% NaCl. This could be explained by the presence of mucilages in the extract which could be the origin of its laxative effect. Our results are in agreement with those obtained by Taloulou (2021) which showed an increase in the frequency of feces followed by a loss of weight in normotensive rats treated with the aqueous extract of the roots of *Dissotis brazzeï* Cogn. However, an increase in body weight was noted in rats treated at a dose of 250 mg/Kg compared to those treated with 8% NaCl. Besides, it was pointed out by Ardaillou (2004) that the threshold dose of a drug is a limiting dose above which a

measurable effect appears. This suggests that the dose of 250 mg/Kg would be a threshold dose for the laxative effect of the aqueous extract of *Dissotis brazzeï* Cogn., and which could explain the weight improvement observed. The aqueous extract of the roots of *Dissotis brazzeï* Cogn. does not influence the food consumption of rats at the doses used compared to rats having received 8% NaCl. Regarding water consumption, an increase in the latter was observed in rats treated at a dose of 250 mg/Kg compared to those treated with 8% NaCl. This could be explained by the presence of flavonoids in the plant, which are known for their diuretic effect. These results are similar to those obtained by Boua et al (2013) who worked on the chemical and pharmacological study of two plants used in the traditional treatment of arterial hypertension in Yamoussokro (Ivory Coast), and who also attributed the diuretic effect observed in the presence of flavonoids in the plant Musa paradisiaca (Musaceae) (MP). Concerning blood pressure and heart rate, this study showed a significant reduction in blood pressure and heart rate of rats treated with the extract at the doses used (250 and 500 mg/Kg) compared to rats made hypertensive by NaCl 8%. This reduction is more noticeable at a dose of 250 mg/Kg. This suggests that this extract has a no-dose-dependent diuretic effect. These results are contrary to those obtained by Zahoui et al.(2017), who showed a dose-dependent diuretic effect of the aqueous extract of Combretum micranthum G. Don (Combretaceae) on blood pressure. Moreover, polyphenolic substances are recognized for their venotonic and vasculoprotective properties (Sanogo et al., 2009). Also, for their inhibitory activities on the angiotensin converting enzyme. On the other hand, flavonoids fight against hypertension through their diuretic effects and their capacity to produce NO which induces endothelium-dependent vasorelaxation of the arteries, thus causing a drop in BP (Boua et al., 2013). As a result, the presence of these substances in the extract would be related to the origin of the antihypertensive effect observed. In comparison with the rats in the distilled water control group, the rats made hypertensive by 8% NaCl showed a significant increase in the level of WBC as well as a reduction in the level of HB. Administration of the aqueous extract at a dose of 250 mg/Kg had no effect on the serum level of white blood cells in rats made hypertensive by 8% NaCl. But, at a dose of 500 mg/Kg, it significantly reduces the serum WBC level, bringing it to a level comparable to that of the negative control group (distilled water). This suggests that the aqueous extract of the roots of *Dissotis brazzeï* at a dose of 500 mg/Kg would fight against toxin infections in the body. Because it has been reported that the increase in the serum level of white blood cells is explained by the fact that the animal mobilizes all defense capacities against infections caused by the presence of xenobiotics in its body (Bahi, 2015). This result advocates that the aqueous extract of *Dissotis brazzeï* Cogn.

would oppose the stimulation of the immune production of white blood cells and therefore the inflammatory process. Metabolic syndrome is defined by a global disturbance associating, to varying degrees, abnormalities of lipid and carbohydrate metabolism or even blood pressure. It is due to insulin resistance which is itself linked to excess sodium (Perucca, 2013). For this reason, the effect of the aqueous extract of the roots of *Dissotis brazzei* Cogn. on lipid parameters were evaluated in rats made hypertensive by 8% NaCl. It seems that this extract at the doses used (250 and 500 mg/Kg) significantly reduces the serum level of triglycerides. Instead, it has no effect on serum HDL-C and total cholesterol levels. Besides, it was reported by Yémanlin (2019) that excess blood triglycerides is a risk factor for cardiovascular disease. This suggests that the aqueous extract of the roots of *Dissotis brazzei* Cogn. at the doses used has an anti-hypertriglyceridemia effect which is a risk factor for high blood pressure. These results corroborate with those obtained by Etou Ossibi et al. (2012), who showed a drop in triglyceride levels in rats treated with the aqueous extract of Lippia multiflora, with an antihypertensive effect. The results on the effect of the aqueous extract of the roots of *Dissotis brazzeï* Cogn. on the weight of noble organs such as the heart, liver, spleen and kidneys, rats at the end of the experiment showed no significant change in the weight of these organs in rats treated at the doses used (250 and 500mg/Kg) compared to those who received 8% NaCl. These results are comparable to those found by Taloulou (2021) who worked on the evaluation of the effect of the aqueous extract of the roots of *Dissotis brazzeï* Cogn. (melastomataceae) on the biological parameters of myocardial infarction in rats, and which showed that the extract at different doses (125, 250 and 500 mg/kg) does not alter heart mass (Taloulou, 2021).

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