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Protective Effect of Chloroformic Extract of Abrus Precatorius in Renal Parameters on Albino Rats (Rattus Norvegious)

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Abstract—*Abrus precatorious is the member of family leguminous with characterstic red and black seeds. The leaves, roots and seeds of Abrus precatorious are used for medicinal purposes. In India, it is commonly known as Ratti, Gaungchi, Crab's eye, etc. Abrus precatorious gives a crab's eye view mainly on the pharmacognostic characteristics, phytochemistry and pharmacognostic actions of the plant. The seeds of Abrus precatorious are used by tribal people for common ailments related to*
reproduction. Abrus precatorious is now considered as a valuable source of unique natural products for development of medicines against various diseases. Protective effect of chloroformic extract of Abrus precatorious on renal and different biochemical parameters like Bilirubin, Creatinine, Urea, SGOT, SGPT, Acid Alkaline, Acid phosphatase were observed in renal tissues. Rats were divided into two groups. The rats were divided in experimental and control group of 8 animals each. Out of these two groups of set I, group II served as chloroformic extract of Abrus precatorious seeds of dose 20 mg/rat/day for 15 and 30 days respectively. The insignificant changes in these biochemical
parameters showed that Abrus precatorious is not toxic for renal tissues .

Keywords*: Pharmacognostic characteristic, pharmacological actions, Gaungchi, Albino Rats.*

1. INTRODUCTION

Population explosion is one among the most deadlist threat to the socity, to protect ourselves from the adverse effect of this problem use to contraceptive is first measure adopted by human beings. Therefore, serch of newer contraceptive is being carried out. In this context a herbal male contraceptive having reversible effect can become only answer to the population explosion and the threats, world is facing to this high rapid increase in individuals. In India, several plants have shown potentials for a successful male contraceptive agent. Bansal et.al. (2004) have reported degeneration in spermatogenic cells and an increase in testicular cholesterol, lipids, and sialic acid with alcoholic extract of Abrus precatorious seeds suggesting its effects on steriodogenesis. The aqueous and methanolic extract of seeds of this plant possess antispermatogenic properties. Also, it does not cause damage to hepatic tissue (Sharma 2007). The eluted fraction of chloroformic extract of seeds of A. precatorious affect spermatogenesis, sperm motility and cause malformations in the spermatozoa (Khan 2008) and the seeds of Abrus precatorious cause vomiting, Diarrhea and abdominal pain because it contains abrin, agglutinin and isoflavin (Anitha etal. 1999; Linn et.al. 2000; Pannerselvam et.al. 2000) .The Abrus precatorious seeds show the antifertility activity due to presence of saponin, agglutinin, glycyrrhizin and glycolytic enzymes (Maa etal. 1998). So, the present plant Abrus precatorious, was selected because it shows spermicidal effects with no adverse effects on liver function. Plant Abrus precatorious with seeds The seeds of Abrus precatorious are used by tribal people for common ailments related to reproduction. In this study the aqueous extract of Abrus precatorius seeds could posses moderate toxicity and adequate Abrus precatorious is the member of family leguminous with characteristic red and black seeds. The leaves, roots and seeds of Abrusprecatorious are used for medicinal purposes, a practice most probably dating back to antiquity (Ivon, 2003). Herbal medicinal plants have been used as safe alternatives of the chemical methods. Evaluation of the herbal medicinal plants has been in progress for several decades to identify effective and safe substances for fertility regulation. Crude extract of Abrus precatorius, seed has anegative impact on male reproductive function. It might be suggestested that crude mixture of *Abrus precatorius* seeds might have antifertility property for male rats. *Abrus precatorius* gives a crab's eye view mainly on the pharmacognostic characteristics, phytochemistry and pharmacological action of the plant. *Abrus precatorius* is now considered as a valuable source of unique natural products for development of medicines against various disease. This study provides an information on botanical name, family, partsused, extract used, dose, duration and their possible male antifertility effects in various animals. It is commonly known as Ratti, Gaungchi, Crab's eye, etc. should be exercised in its used in ethnomedicine. Leaves of *Abrus precatorius* are sweet and traditionally used to treat cough, malaria, snake bites and

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boils. So, the study evaluates the proximate and minerals composition of *Abrus precatorius* and establishes the best solvent solvent for the extraction of the sweet component of the leaves, by performing organolepticstest on the extract of different solvents, under different temperature condition. Since, this plant has abortificant effect in females, it is used criminally for poisoning and aborting cattle. Haematoxicant can be act directly on circulating blood cells or they can act indirectly by inducing an immune response against the cell type present. Therefore, a study of *Abrus precatorious* on albino rats, blood was undertaken.

Material and Method- Experimental animals and dose-

Pure strains of sexually mature albino rats (*Rattus norvegicus*) were kept under laboratory conditions on standard mouse pellet diet and water ad libitum . Experiment was carried out on albino rats weighing150g to 200g. The rats were divided in experimentalandcontrolgroupsof8animals each. Out of these two groups of set I, group I, served as normal control group, group II served as choloroformic extract of *Abrus precatorious* seeds of dose 20mg/rat/day for 15 and 30 days respectively. After 15 and 30 days treatment the animals were starved for 24 hours and then sacrified bydecapitation.

2. BIOCHEMICAL STUDY-

The estimation of serum bilirubin, acid phosphatase, alkaline phosphatase activity, SGOT, SGPT and serum creatinine, blood urea was done by calorimeter using standard chemistry.

3. COLLECTION OF BLOOD AND SERUMSAMPLES-

Blood samples were collected by cervical decapitation from diethyl ether anaesthetized rats. The serum was separated from the clot and centrifused into clean bottles and biochemical analysis.

4. RESULT AND DISCUSSION-

When chloroformic extract of *Abrus precatorious* (Linn.) seeds was administrationorallyindoseof20mg/rat/dayafter15and30days, following variations in the different biochemical parameters were observed. In the renal tissue the bilirubin level was no change in animal treated with 20 mg/rat/day after 15 days. The changes was insignificant after 15 days. As well as after 30 days the serum bilirubin level of treated rats showed insignificant. These findings are in agreement with the findings of **Sharma (2007)**, who have reported no significance changes in bilirubin level in administration of chloroformic extract of *Abrus precatorious* (Linn.) Seeds in albinorats. Similary, **Adedapo *et.al.* (2007a)** reported total bilirubin were unchanged on administration of *Ballotanigra*inalbinorats. These findings are also similar to the findings of **Sahoo *et.al.* (2008)** who have reported no changes of in bilirubin level caused due to *Abrus precatorious* in albino rats. **Mohagheghi *et.al.* (2011)** reported no changes in serum bilirubin level caused due to *Hibiscus sabdariffa* in diabetic rats. But contradict with the findings of **Adedapo *et.al.* (2008)** who have reported a decrease in the levels of total and unconjugated bilirubin on administration of aqueous extract of *Acacia Karroo* stem bark in rats and mice. **Jimoh *et.al*. (2008)** who have reported the aqueous extract from the shoot of *Arctotisarctotoides* causes decreases in the serum bilirubin level in rats. These observations also contradict the observations of **Sharma(2008)** who reported increase in the activity of serum bilirubin on administration of **Endosulfan** and **Diazinon** in male albino rats. **Sharma (2008)** significant toxic changes on administration of **Malathion** in male albinorats. In the renal tissue, the serum creatinine levelwasnochangeinanimaltreatedwith20 mg/rat/day after 15 days. The changes was in significant after 15 days. As well as after 30 days the serum creatinine level of treated rats showed insignificant. These findings are in agreement with the findings of **Gathumbi *et.al* .(2000)** and **shinde *et.al.* (2003)** who have reported similar results with the aqueous extract of *Pruns africana* stem bark and *Arctotis aractotoides* extract in rats.

These observations are in agreement with the observations of **Sharma (2005)** who have reported similar result with chloroformic extract of *Abrus precatorious* (Linn.) seeds. **Adedapo *et.al.* (2007a)** who have reported the aqueous extract of leaves of *Acacia karroo* cause decrease in creatinine level in albino rats. **Jimoh *et.al*. (2008)** who have reported the aqueous extract from the shoot of *Arctotis arctotoides* causes no toxic changes in the serum creatinine level in rats and mice. These findings are in agreement with the findings of **Gupta *et.al.* (2008)** who have reported no acute and sub- acute changes in creatinine level with aqueous extract of *Rhodiola imbricate* roots in rats. These observation are in agreement with the observation of **Wurochekke *et.al.* (2008)** But, the findings contradict the findings of **Murali and Goyal (2001),**

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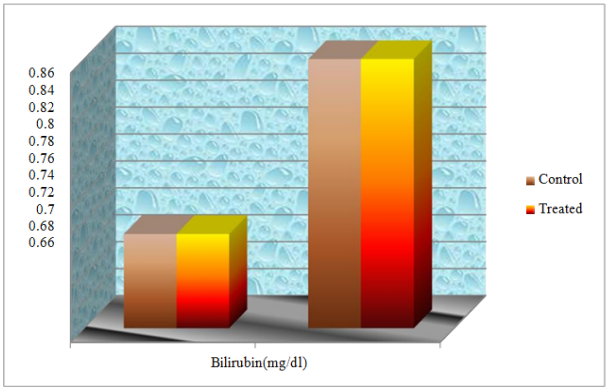
who have reported that *Tinospora cordifolia* used in insulin treatment cause increase in serum creatininelevelsonlyafter30daysindiabetic rats. **Akdogan *et.al.* (2003)** reported increase in the level of serum creatinine on administration of *Menthaspicata* and *Mentha piperita* Linn. in rats. **Shinde and Goyal (2003)** who have reported that serum creatinine level indicate the impaired renal function of diabetic animals. Who have reported the aqueous stem bark extract of Xemenia Americana causes no significant differences in serum levels of creatinine in rats. These observations are in accordance with the observations of **Jaykaran et.al. (2009)** who have reported *Ficus racemosa* Linn. Bark causenolethallevelinalb in orats. These findings are in agreement with the findings of **Okasha** et.al. **(2008)** reported no significant changes in creatinine level on.

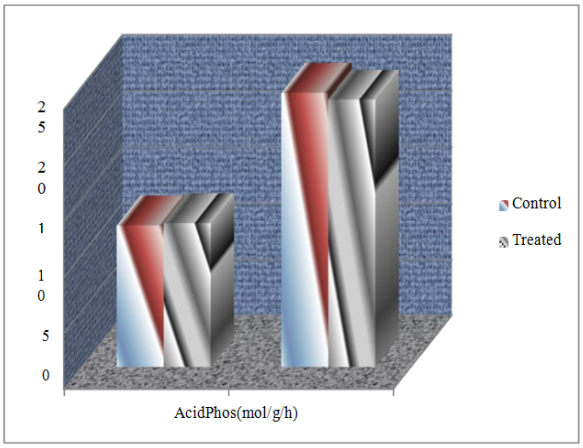
Table-1 Blood biochemistry of albino rats treated with 20 mg/rat/day dose of chloroformic extract of *Abrus precatorious* seeds (Linn.) after 15 days of treatment administration of aqueous seeds extract of *Hibiscus sabdariffa* in female albino rats.

Table-2 Blood biochemistry of albino rats treated with 20 mg/rat/day dose of chloroformic extract of *Abrus precatorious* seeds (Linn.) after 30 days of treatment

Kesari *et.al.* (2007) who have reported increase in the level of creatinine on administration of aqueousextractof*Murrayakoenigii*inalbinorats.Brownetal.(2007)reportedsignificantchanges of serum creatinine level on administration of aqueous and alcoholic stem extract of Tinospora cordifolia in diabetic rats. **Mohagheghi *et.al.* (2011)** reported no changes in serum creatinine level caused due to *Hibiscus sabdariffa* in diabetic rats. These observations also contradict with the observations of **Singh *et.al.* (2007)** who reported a significant increase in the activity of serum creatinine level on administration of **Dimethyl Mercury** in rats. Alwakeel (2009) who have reported the **Mytotoxins** fungal extract cause high creatinine level in the blood of albino mice. **Bulbul *et.al.* (2009)** reported increase in the level of creatinine on administration of "**Garbha Gintamani Rasa**" (GGM) in rats. In the renal tissue, the Blood Urea level was no change in animal treated with 20 mg/rat/day after 15 days. The changes was in significant after 15 days. As well as after 30 days the Blood Urea level of treated rats showed insignificant. These findings are in agreement with the findings of **Garg *et.al.* (1992)** who have reported similar results with the aqueous extract of **Silken styles of corn zea maize** Linn. cause no significant toxic effect on Blood Urea level on administration of aqueous extract of *Prunus africana* stem bark in rats. These observations are similar to the observations of **Sharma (2005)**, who have reported no cute changes in Blood Urea level were on administration of *Abrus precatorious* (Linn.) seeds extract in albino rats. Similary, **Adedapo *et.al.* (2007a)** who have reported Blood Urea were unchanged on Administration on *allota nigra* in albinorats.**Wurochekke*etal.*(2008)**whohavereportedtheaqueousstembarkextractof *Xemenia americana* no significant changes in blood urea level in rats. **Sahoo *et.al.* (2008)** reported no changes of in Blood Urea level caused due to *Abrus precatorious* in albino rats.

		Bilirubin	Creatinine	SGOT	SGPT	Blood Urea	Acid phos.	Alkaline Phos.
Control	Mean	0.73	0.86	43.8	25	16.8	12.7	24.5
	± SD	±0.73	±0.01	±3.88	±6.55	±0.23	±0.54	±2.33
Treated	Mean	0.73	0.86	43.1	25.6	16.7	12.9	23.9
	±SD	±0.01	±0.02	±1.64	±3.20	±0.4	±0.41	±1.25





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These findings are also similar to the findings of **Jaykaran et.al. (2009)** who have reported no effect on Blood Urea level on administration of aqueous extract of *Ficus racemosa* Linn. bark in albino rats. However, the findings are contradictory to findings of **Kheifat *et.al.*(2002)** who have reported increase in Blood Urea level on administration *Teucrium polium* ethanolic extract in rats. **Akdogan *et.al.* (2003)** reported increase in the plasma Blood Urea level on administration of *Mentha spicata* and *Mentha piperita* Linn. in rats. **Sharma (2008)** who reported significant toxic changes on administration of **Malathion** in male albio rats. **Jimoh et.al. (2008)** who have reported the aqueous extract from the shoots of *Arctotis arctotoides* causes decrease Blood Urea level in rats.

These findings are contradictory to the findings of **Alwakeel (2009)** reported high Blood Urea level in the blood of albino mice caused on administration of **Mytotoxins** fngal extract. **Bulbul *et.al.* (2009)** who have reported in crease in the level of Blood Urea on administration of "**Garbha Gintamani Rasa**" (GGM) in rats.

In the renal tissue, the SGOT and SGPT level was no change in animal treated with 20 mg/rat/day after 15 days. The changes was insignificant after 15 days. As well as after 30 days the SGOT and SGPT level of treated rats showed insignificant. These findings are in agreement with the findings of **Garg *et.al* . (1992)** who have reported no significant toxic effect on SGOT and SGPT level on administration of aqueous extract of **Silken styles of cornzea maize** Linn..Dubey et.al.(1994) who reported no significance changes in SGOT and SGPT level on administration of Liv-52 in albino rats. The se observation are also in agreement with the observations of **Gathumbi *et.al*.(2000)** who have reported the aqueous extract of *Prunsafricana* stem bark on administration of no significance changes in SGOT and SGPT level caused due to some indigenous plants in male albin orats. Baskaran et.al. (2001) showed that lactulose up to 5% level in the dietdonotcauseany toxicity in rats as evidenced by Serum Glutanic Oxaloacetic Acid (SGOT) and Serum Glutanic Pyruvate Transminase (SGPT) levels. Gosh and Suryawanshi (2001) reported no significant extracts of Vinca rosea leaf and flower (VRL & VRF) in male albino rats.

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