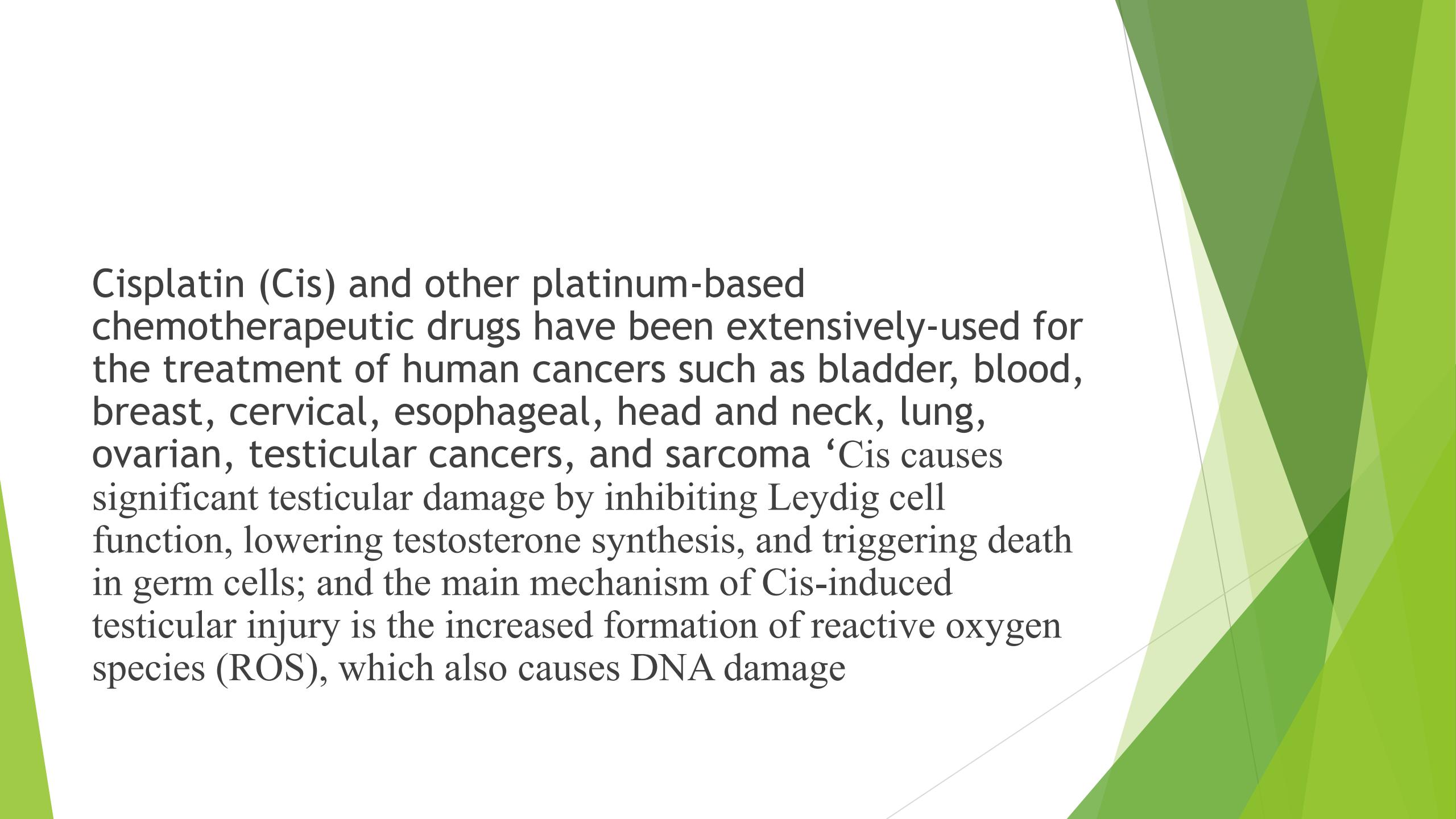
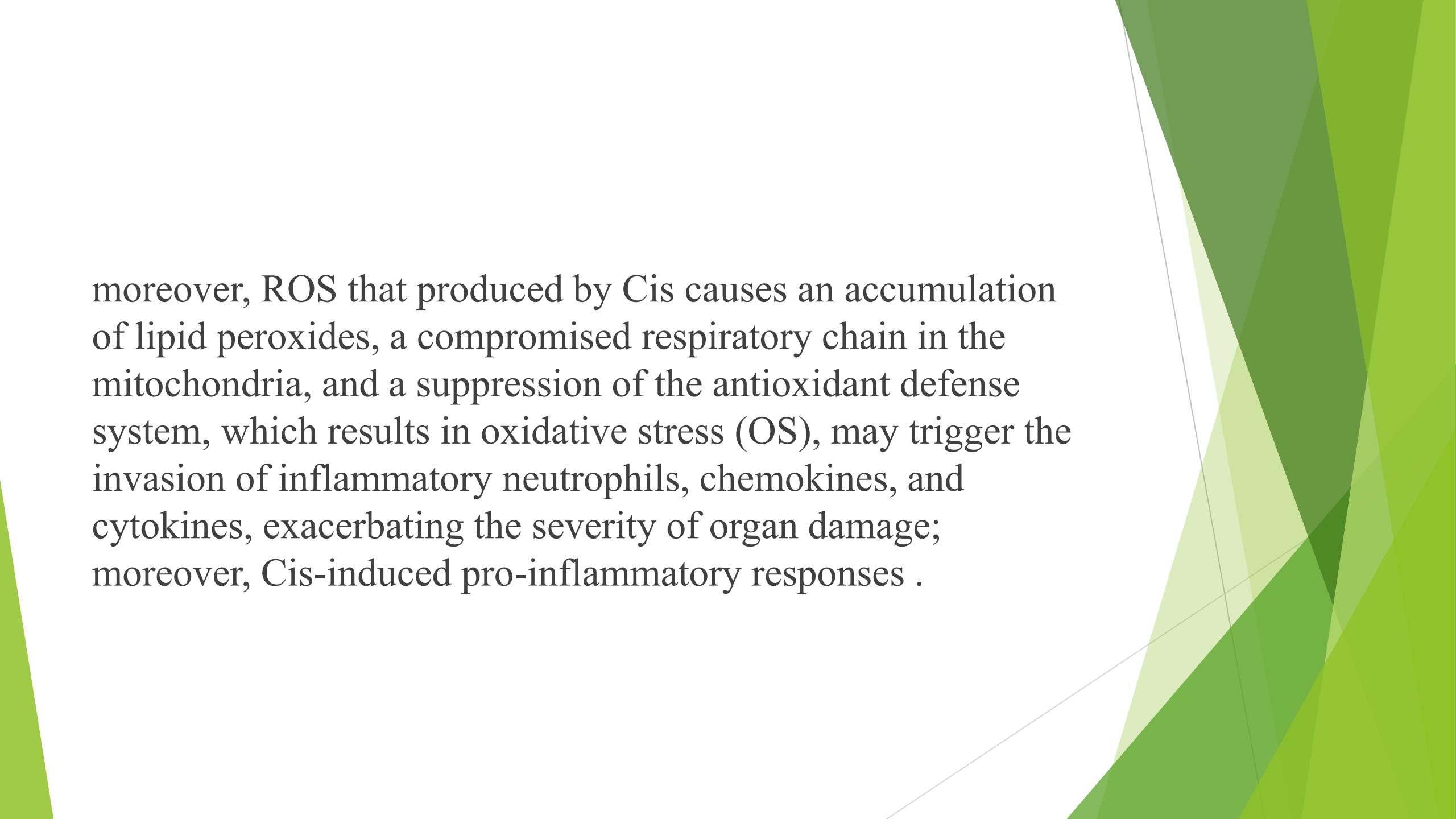


► **Evaluation of the Protective Effects of Fimasartan and/or Candesartan alone and in Combination with omega 3 against Cisplatin-induced Testicular Toxicity in Male Rats**

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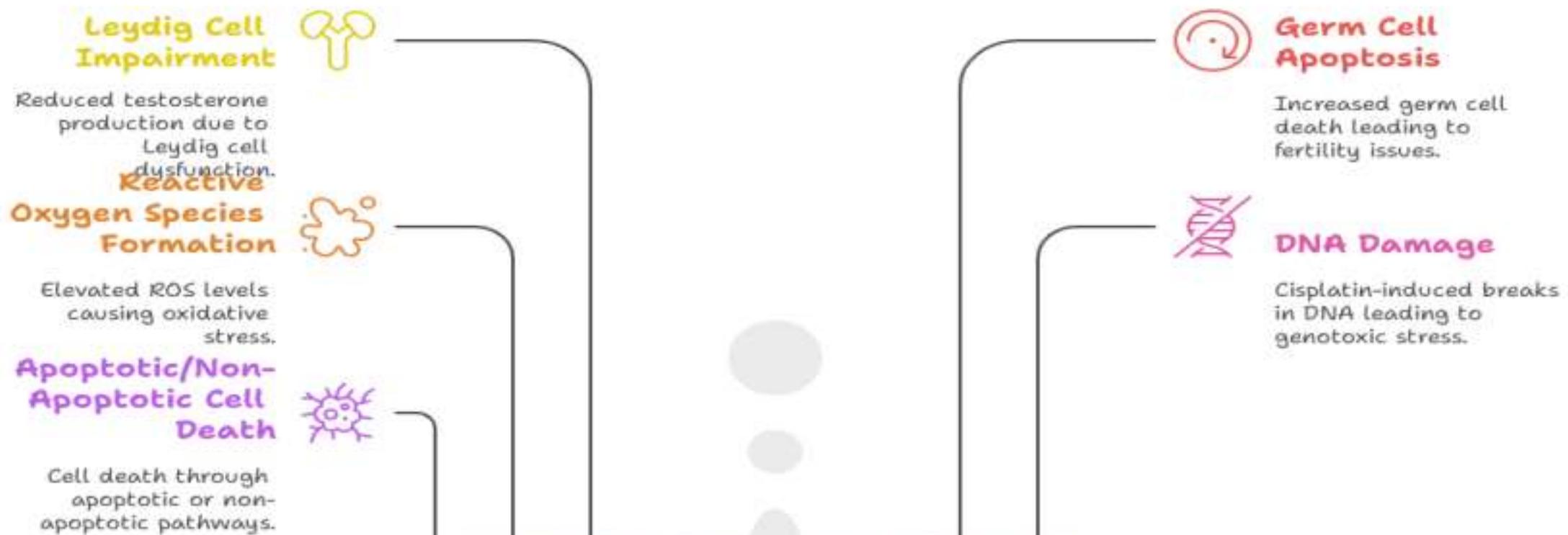


Cisplatin (Cis) and other platinum-based chemotherapeutic drugs have been extensively-used for the treatment of human cancers such as bladder, blood, breast, cervical, esophageal, head and neck, lung, ovarian, testicular cancers, and sarcoma ‘Cis causes significant testicular damage by inhibiting Leydig cell function, lowering testosterone synthesis, and triggering death in germ cells; and the main mechanism of Cis-induced testicular injury is the increased formation of reactive oxygen species (ROS), which also causes DNA damage

A large, abstract graphic in the background is composed of several overlapping, semi-transparent green triangles of varying shades. The triangles are oriented at different angles, creating a dynamic and layered effect. The overall shape of the graphic is roughly triangular, with the points pointing towards the top right corner of the slide.

moreover, ROS that produced by Cis causes an accumulation of lipid peroxides, a compromised respiratory chain in the mitochondria, and a suppression of the antioxidant defense system, which results in oxidative stress (OS), may trigger the invasion of inflammatory neutrophils, chemokines, and cytokines, exacerbating the severity of organ damage; moreover, Cis-induced pro-inflammatory responses .

Cisplatin-Induced Testicular Damage



- ▶ Fimasartan, the ninth and latest angiotensin II receptor blocker (ARB), was approved for the treatment of hypertension by the Korea Food and Drug Administration in 2010 and entered the market in 2011 . ARBs have been reported to reduce peripheral and cerebrovascular inflammation and also stress-induced gastric ulcerations, in lipo-polysaccharide stimulated macrophages^[8]; moreover, fimasartan suppressed the expression of inducible nitric oxide synthase (iNOS) and also attenuated transcriptional and DNA-binding activities of NF- κ B and AP-1



Hypertension Treatment



Inflammation Reduction



Cardioprotective Effects



Apoptosis Prevention



Atherosclerotic Plaque Reduction

Fimasartan

Study design

- ▶ Forty-two (42) male Wistar rats (weighing between 150 and 200g, and being 8-10 weeks old) to be randomly-allocated into 7 Groups of 6 animals as follows:
- ▶ Group I: Animals will orally-administer a suspension of carboxymethyl cellulose (CMC) (0.4ml/day) by rats' oral gavage for 10 successive days.

Group II: Animals will orally-administer a suspension of 0.4ml/day CMC by rats' oral gavage for 10 successive days; then on day 10, the animal will intraperitoneally (I.P.) injected with a single dose 7mg/kg cisplatin [21].

Group III: Animals will orally-receive fimasartan at dose (10mg/kg/day) [22] for 10 successive days; and, on day 10, the animal will I.P. injected with a single dose 7mg/kg cisplatin.

Group IV: Animals will orally-receive candesartan at dose (5mg/kg/day) for 10 successive days; and, on day 10, the animal will I.P. injected with a single dose 7mg/kg cisplatin

Group V: Animals will orally-receive omega-3 at a dose (400mg/kg B.W) for 10 successive days; and on day 10, the animal will intraperitoneally (I.P.) inject with a single dose 7mg/kg cisplatin [24].

Group VI: Animals will orally receive -fimasartan at dose (10mg/kg/day)+ omega-3 at dose (400mg/kg/day) for 10 successive days and on day 10, the animal will I.P. injected with a single dose 7mg/kg cisplatin.

Group VII: Animals will orally-receive candesartan at dose (5mg/kg/day)+ omega-3 at dose (400mg/kg/day) for 10 successive days and on day 10, the animal will I.P. injected with a single dose 7mg/kg cisplatin.

Experimental Study Design Sequence

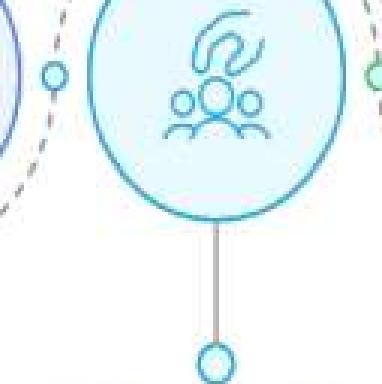
Random Allocation of Rats

Rats are randomly divided into seven groups



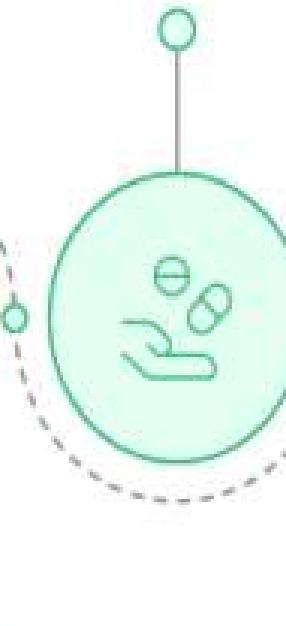
Administration of CMC

CMC is administered to specific groups



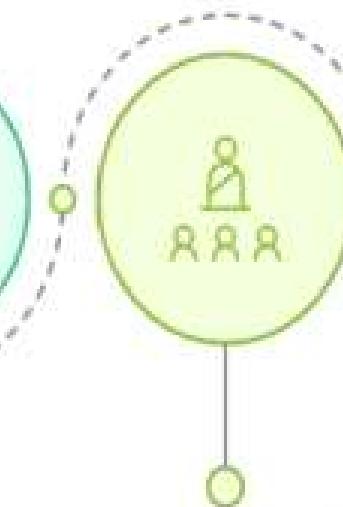
Administration of Fimasartan

Fimasartan is administered to specific groups



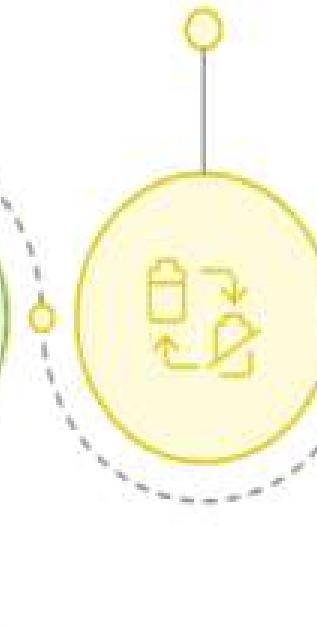
Administration of Candesartan

Candesartan is administered to specific groups



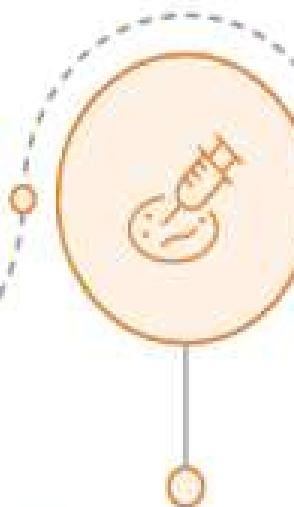
Administration of Omega-3

Omega-3 is administered to specific groups



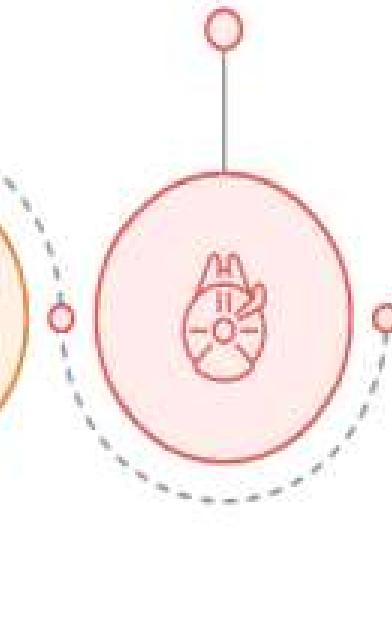
Cisplatin Injection

Cisplatin is injected into all groups

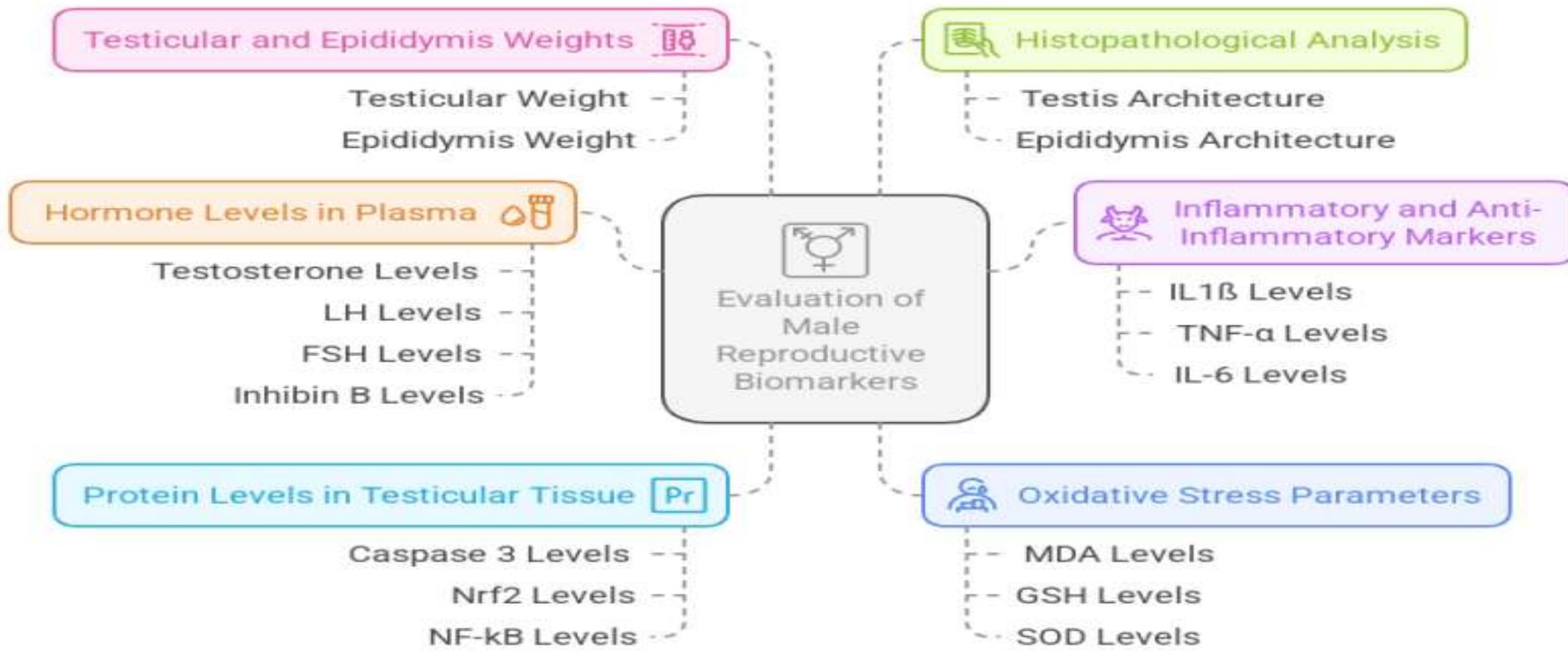


Euthanasia of Rats

Rats are euthanized for further analysis



Evaluation of Male Reproductive Biomarkers



THANK YOU