Reviewer's report

Title: Hypothyroidism attenuates protein tyrosine nitration, oxidative stress and renal damage induced by ischemia and reperfusion: effect unrelated to antioxidant enzymes activity

Version: 1 Date: 21 July 2005

Reviewer: Devinder Singh

Reviewer's report:

General

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached):

In the present study the authors have studied the effect of hypothyroidism on protein nitration, oxidative stress and renal ischemia reperfusion injury. The study seems to be novel in itself and the work put in by the authors is praiseworthy. The methods are well described and results well presented. The results very well describe the effect of hypothyroidism on nitrosative stress induced by IR, however, there are a few major issues to be taken up before this manuscript can be accepted for publication in this esteemed journal.

Major Compulsory Revisions:

1. The authors are requested to do an extensive literature search on the Oxidative damage and antioxidant enzyme activities in experimental hypothyroidism and incorporate the same in the introduction and discussion parts.

2. The ‘Ischemia reperfusion studies’ suggests that there are only two groups used in the study and the same groups served as CT & HTX at t=0 and IR & HTX+IR at t=24. There is no mentioning of plasma isolation at t=0? The whole paragraph is confusing. If I am getting it right, there should be minimum of four groups: CT, HTX, IR and HTX+IR??

3. In the kidney homogenization part of Methods, the authors state that the whole kidney was homogenized and the supernatant was used for the further enzymatic analysis. However, in the results it is said that the antioxidant enzymes were estimated separately in cortex and outer/inner medulla. This thing needs explanation?

4. Table 1. The creatinine and BUN levels in HTX+IR animals are still alarmingly high and are rather close to the IR group (5.08 vs 3.83)?

5. Table 2, 3 & 4. There was no change observed in the antioxidant enzyme levels even after IR alone. However, the role of oxidative stress and depletion of antioxidant enzyme pools in the renal IR is well established. Furthermore the following points need some explanation:

   a)The fall in CT and HTX cortex catalase activities from 0.22 to 0.17 and 0.22 to 0.14? The similar is the case with outer medulla catalase here, a 50% decrease from 0.08 to 0.04?

   b)The fall is HTX cortex glutathione peroxidase levels: 0.11 to 0.04?
c) The fall in HTX medulla superoxide dismutase levels: 10.4 to 5.6?

All these changes have been shown to be non significant in the manuscript?

6. The authors are suggested to include the effect HTX on the renal IR induced oxidative stress, by doing lipid peroxidative studies.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct):

Minor Essential Revisions:

Please check the following and any related typographical mistakes:

Introduction:

1. line 9; it should be or in the other circumstances such as….. Instead of circumstance.

2. ….[16, 17], previous to renal oxidant insult should be replaced by prior to renal oxidative insult.

Method:

1. Induction of hypothyroidism------- line 4, replace anaesthesia with anesthesia, as in the whole of manuscript it is US English that is used by the authors.

2. Immunohistological localization of 3-NT, DNP, and 4-HNE------- deparaffinized instead of deparaffined.

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No