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Crude hMG Product from the Urine of Postmenopausal Women in 30% Polyvinylpyrrolidone (PVP) and Propylene Glycol (PG) Toward Histological Changes in Rat

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ABSTRACT

Research has produced crude hMG products from the urine of postmenopausal women as an alternative hormone to glycoproteins. Urine hMG crude isolated from local Indonesian women with determination in every 75 IU divided the dose up to 10 IU each dissolved in sterile aquabidest (T0) Observations were made at the intra peritoneal injection site on 30 female white rats, with every 10 females given 1 male. After 48 hours of injection of 10 IU hMG, 10 IU hCG chorulon was injected and waited for 17 hours, then surgery was performed. Observations of histological changes in the peritoneum, kidney, liver and ovaries were divided into groups T0 (10 animals), T1 (10 animals) and T2 (10 animals). No histologic changes were found on the peritoneal surface, ren, liver as a result of injection of hMG 10 IU hMG (T0) Crude hMG dissolved in 30% Polyvinylpyrrolidone (PVP) T1 or Crude hMG in soluble propylene glycol (PG) T2 which is the real purpose of administration of PVP Solvent and PG is to obtain a single dose so that the results of gonadotropin activity are obtained for ease of use in experimental animals P> 0.05, meaning that even though 10 IU hMG was used it did not cause histological changes in the tissue studied. However, in white mouse tissue, intraperitoneal injection of hMG 10 IU in T0, T1 and T2 caused changes and growth of follicles on the surface of the ovary until ovulation occurred P> 0.05.

1. INTRODUCTION

Natural urine extracts from menopausal gonadotropin therapy are still used for human infertility or animals. That is, hMG is not species-specific. Gonadotropins or glycoprotein hormones are protein hormones secreted by vertebrate anterior pituitary gonadotropin cells and include the mammalian hormones FSH and LH [18-20]. These hormones are at the heart of the complex endocrine system that regulates sexual development and

reproductive function. LH and FSH are heterodimers composed of two peptide chains with approximately the same alpha chain (about 100 amino acids long), an alpha chain and a beta chain, and the beta chain provides specificity for receptor interaction [43- 46]. The steady development of knowledge about animal and human reproductive processes has led to the identification of higher centers that regulate the dynamics of ovarian function and the discovery of follicle-stimulating hormone. As the mechanism of action of these hormones became more and more understood, they were used in the treatment of infertility in the early 1930s. Hormonal extracts were originally made from animal pituitary and pregnant horse serum, and pregnant human pituitary, placenta, and urine. Due to the difficulty and cost of producing FSHLH, the hormone hMG is an alternative to animal hyperovulation and estrus synchronization [19]. [21]. In animals, the use of hMG for hyperovulation increases follicle size and improves pregnancy. Higher rate and number of embryos and lower cost [11]. Therefore, research is needed to enable postmenopausal females to produce hMG1. Because FSHLHLike was first manufactured in the form of an injectable hormone of 150 IU for human reproductive health. The most important ingredient that supports hMG is well known as the balanced FSHLH content, ie FSH 75 IU and LH 75 IU, or the composition of FSH: LH 50%: 50%. hMG can be used directly in the process of human in vitro maturation (IVM) and in vitro fertilization (IVF) for female infertility. Treatment with hMG results in very satisfactory egg collection and embryonic development [1- 11].

2. MATERIALS AND METHODS

After determining the level of crude hMG urine for menopausal women using the elisa method, it was also determined that the level of 10 IU crude hMG was injected intra peritoneally into female white rats., Ti was injected with 10 IU of hMG Crude hMG urine of menopausal intra peritoneal dissolve in 30%Polyvinylpyrrolidone (PVP) [28- 34]. T2 10 white rats were injected with 10 IU hMG Crude hMG urine for intra peritoneal menopausal women dissolve propylene glycol (PG) in a ratio of 1:4 [35- 42]. The injection of 10 IU hMG hMG was carried out at the basic estrus synchronization. After 48 hours continued 10 IU hCG chorulon was injected and waited for 17 hours, then surgery was performed. observations were made of the injection site for intra peritoneal histological changes, in the kidneys, liver and ovaries in groups T0, T1 and T2, respectively.

3. RESULTS AND DISCUSSION

Research Results 2 Observations were made at the intra peritoneal injection site in 30 white rats, with every ten males given 1 male where the former injection site was 10 IU hMG after 48 hours. After 17 hours of hCG chorulon 10 IU injection, the observation of histological changes in the peritoneum, kidney, liver and ovaries were divided into groups T0 (10 Rats), T1 (10 Rats) and T2 (10 Rats) respectively. No histologic changes were found on the peritoneal surface as a result of injection of hMG 10 IU hMG (T0) Crude hMG in Polyvinylpyrrolidone (PVP) T1 or Crude hMG in soluble propylene glycol (PG) [41] T2 where the real aim of administering PVP and PG solvents is to obtain a dose of single in order to obtain the results of gonadotropin activity for ease of use in experimental animals P> 0.05, meaning that even though 10 IU hMG was used it did not cause histological changes in the tissue studied. However, in white rat tissue, intraperitoneal injection of hMG 10 IU caused changes and growth of follicles on the surface of the ovary until ovulation occurred. Observations were made at the intra peritoneal injection site on 30 white rats, every 10 males were given 1 male where the former was injected with 10 IU hMG after 48 hours. After 17 hours of injection of hCG chorulon 10 IU, histological changes were observed in the peritoneum, kidney, liver and ovaries divided into groups T0 (10 rats), T1 (10 animals) and T2 (10 animals) respectively. No histologic changes were found on the peritoneal surface as a result of injection of hMG 10 IU hMG (T0) Crude hMG in Polyvinylpyrrolidone (PVP) T1 or Crude hMG in soluble propylene glycol (PG)41 T2 where the real purpose of administering PVP and Solvent PG is to get a single dose so that the results of gonadotropin activity for ease of use in experimental animals P> 0.05 means that even though 10 IU hMG is used it does not cause

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histological changes in the tissue studied. However, in white rat tissue, intraperitoneal injection of hMG 10 IU caused changes and growth of follicles on the surface of the ovary until ovulation occurred. At intervals of 1 week, 3 weeks or 9 weeks after the injection, 10 mice from each group were anaesthetized with ether and the tissue surrounding the injection site removed. The removed tissue was immediately fixed in 4% paraformaldehyde/0.05 M phosphate buffered solution. The samples were embedded in paraffin and sectioned specimens stained with haematoxylin and eosin (HE).

The histology of the stained sections was examined by light microscopy. Haematoxylin and eosin-stained sections of tissue surrounding the injection site as viewed by light microscopy. Polyethylene glycol was injected subcutaneously into the mouse 3 weeks earlier. Slight inflammatory cell infiltration can be observed (× 100) (kawakami,2004). major renal histopathological changes during different stages of EG poisoning, which may be helpful when determining the date of EG poisoning itself. A single center retrospective study conducted on all cases of EG poisoning showed that in the early stages of EG poisoning, fine crystalline dust was deposited onto the basement membrane of tubular cells, followed by internalization of calcium oxalate crystals into epithelial cells. Then, the crystals form larger aggregates within the epithelial cells. As the changes progress, tubular epithelial damage occurs with repeated therapy [47], [48]. Tests were performed on 10 New Zealand white rabbits after PVP injection into the knee joint for 3, 7, 14 and 30 days and submitted for macroscopic and histological evaluation. The test results were compared with the data obtained after injection of normal saline. Macroscopically there was no change in the boundaries of the articular capsule and cartilage; there was little and no synovial membrane enlargement in the first 7 days after PVP injection. In histological tests it was observed that the reaction in the knee joint after PVP injection is characterized by a single inflammatory chain without the significant participation of neutrophils [50]. The efficacy of a single intramuscular dose of 450 or 600 international units (IU) of human menopausal gonadotropin (hMG) or 30 mg of follicle stimulating hormone (FSH), each dissolved in 30% polyvinylpyrrolidone K-30 (PVP), for superovulation treatment was compared to that of superovulation induction by administration of a total dose of 600 IU hMG given in declining doses twice daily over a 3-day period in black cattle no changes of side effect [51].

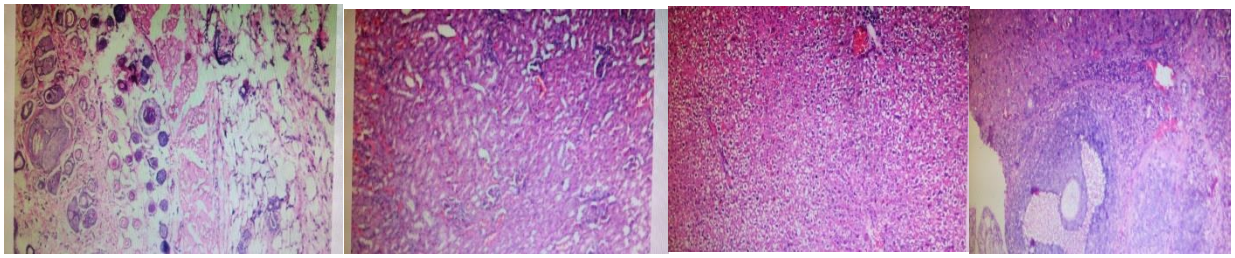

Fig 1.10 IU Crude hMG as control group without Polyvinylpyrrolidone (PVP) and propylene glycol (PG) There was no change in Peritoneum, Kidney and liver tissue after injection and the development of dominant follicles in the ovaries

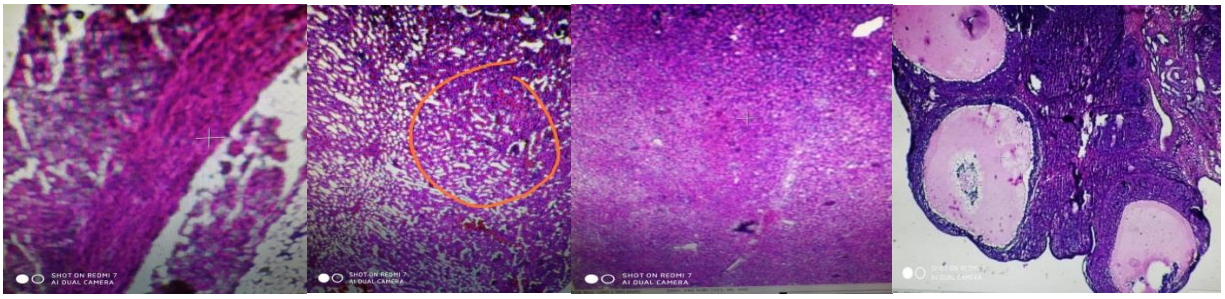

Fig 2.10 IU Crude hMG in Polyvinylpyrrolidone (PVP) There was no change in Peritoneum, Kidney and

liver tissue after injection and the development of dominant follicles in the ovaries

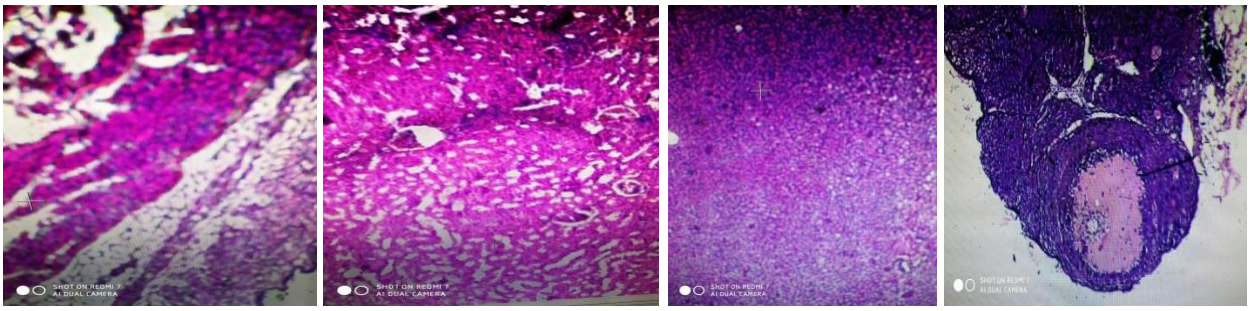

Fig 3. 10 IU Crude hMG in soluble propylene glycol (PG) There were no changes in Peritoneum, Kidney and liver tissue after injection and the development of dominant follicles in the ovaries

4. Conclusion

Polyvinylpyrrolidone (PVP) or dissolved in propylene glycol (PG) could not cause histological changes in the studied tissues. However, in rat tissue, intra-peritoneal injection of hMG 10 IU caused changes and growth of follicles on the surface of the ovary until ovulation occurred P> 0.05.

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