USING IODINE DRUGS FOR RADIATION PROTECTION

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Introduction. Nowadays we can't imagine a world without nuclear energy, because humanity needs the huge reserves of energy. Atomic energy is a relatively cheap resource. During the accidents at the nuclear power plants, radioactive isotopes of iodine and cesium generally fall into the atmosphere. The thyroid gland is the only body organ, which captures large amounts of iodine from the outside. Iodine is necessary for the synthesis of thyroid gland hormones. The thyroid gland does not distinguish stable iodine from radioactive. Despite the fact that many residents of our country have endemic iodine deficiency the thyroid gland absorbs iodine at high speed. Therefore, it is important to prevent iodine because of the threat of radioactive contamination.

The **aim** of this paper is to show the versatility of an old drug that continues to be a safe and effective therapeutic option for the treatment of skin diseases, and is an effective drug for the protection of the thyroid gland from the radioactive iodine in man-made disasters.

Results. Potassium iodide (or KI, as it's known chemically) is a common form of salt and is known to protect the thyroid gland from radiation and cancer caused by radioactive iodine. Protection is lying in saturating the thyroid gland with nonradioactive iodine. That makes it difficult or impossible for radioactive iodine to be absorbed by the thyroid. If the gland has enough iodine in it, the thyroid doesn't absorb any radioactive iodine and it is flushed out of the system in urine. If radioactive iodide is in the thyroid it increases the chances of cancer of the thyroid in future years. Potassium iodine, however, does not protect against other forms of radiation sickness. Potassium iodide, as a saturated solution, is a valuable drug in the dermatologist's therapeutic arsenal and is useful for the treatment of different diseases due to its immunomodulatory features. The saturated solution of potassium iodide is often the only therapeutic choice available for the treatment of some infectious, inflammatory and immune-mediated dermatoses, no matter whether the reason is specific indication, failure of a previous therapy or cost-effectiveness.

Conclusions. Very promising scientific direction of Inorganic Chemistry Department, is the search for new complexes with iodide ion as a ligand having radiopaque properties. Modern contrast agents for intravenous administration typically contain iodine. Distinguish ionic and non-ionic contrast agents. Initially ionic iodinated contrast have been developed, which are currently still used in radiology. The non-ionic contrast agents iodine linked by covalent bonds, which significantly reduces the risk of complications.