**Supplementary Material –**

**Supplementary Table 1.** Selected prospective observational studies on iodine-based contrast media-induced thyroid dysfunction

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| --- | --- | --- | --- | --- |
| **Study**  | **Country** | **Studied group (n=)** | **Duration of follow-up** | **ICM-induced thyroid dysfunction**  |
| **SHyper** | **OHyper** | **SHypo** | **OHypo** |
| Bonelli et al [30] | Italy | 810\* | 1 year | 74 (9.1%) | 7 (0.8%) | 18 (2.2%) | 2 (0.2%) |
| Hintze et al [60] | Germany | 788\*\* | 12 weeks | 27 (4.9%) | 3 (0.4%) | 3 (0.4%) # | 10 (1.4%)# |
| Özkan et al. [88] | Turkey | 101 | 8 weeks | 7 (6.9%) | 0 | 0 | 0 |
| Skórkowska-Telichowska et al. [89] | Poland | 59  | 6 months | 3 (5%) | 6 (10.1%) | 1 (1.7%) | 0 |
| Lee et al. [46] | USA | 49 | 4 weeks | 4 (8.1%) | 1 (2.0%) | 2 (4.1%) | 4 (8.1%) |
| Koroscil et al. [44] | USA | 56 | 1 week | 0 | 0 | 3 (5.4%) | 0 |
| Mekaru et al. [56] | Japan | 180\*\*\* | 18–82 days | 2 (1.1%) | 0 | 28 (15.6%) | 4 (2.2%) |
| Jarvis et al. [90] | New Zealand | 102 | 8-weeks | 2 (2%) | 0 | 0 | 0 |
| Conn et al. [91] | Australia | 73 | 8 weeks | 4 (5.4%)## | 2 (2.7%) | 0 | 0 |

SHyper -subclinical hyperthyroidism, OHyper - overt hyperthyroidism, SHypo – subclinical hypothyroidism, OHypo – overt hypothyroidism;

\*at baseline 58 patients (7.2%) had Hyper (55 subclinical and 3 overt) and 29 patients (3.5%) had Hypo (27 subclinical and 2 overt).

\*\* at baseline 3.8% had SHyper, 0,1% - OHyper, 4.2% - SHypo, 0.3% - OHypo.

\*\*\* euthyroid women after hysterosalpingography (HSG) using lipiodol

# measured 7 days after coronary angiography, details on the development of SHypo and OHypo were not described in detail

## defined as TSH suppression or FT4 elevation

**Supplementary Table 2.** Selected case reports on ICM-induced Hyper.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Study,****Country**  | **Case** | **Time after ICM exposure** | **Clinical picture**  | **Etiology** | **Treatment** |
| Brundridge et al., USA [38] | 34-year-old man\*\* | ~10 hours after CT scan  | Cardiogenic shock secondary to thyroid storm. | GD | PTU 600 mg/day, esmolol iv, in addition to phenylephrine, hydrocortisone and vasopressin infusion.  |
| Alkhuja et al., USA [37] | 53-year-old woman\*\* | minutes after CT scan | Thyroid storm complicated by cardiac arrest, pulmonary edema, and acute respiratory failure.  | GD | Cardiopulmonary resuscitation, methimazole (80 mg/day via oral-gastric tube, propranolol  |
| Ledingham et al., UK [92] | 76-year-old man\*\* | 2 months after coronary angiography  | Atrial fibrillation (AF) and episodes of angina | Large TMNG | Prednisolone, PTU, (planned treatment with radioiodine), several rate-limiting agents, antianginal medications and warfarin |
| Iakovou et al., Greece [93] | 66 year-old woman\* | less than 24 h after CT | Typical symptoms of thyrotoxicosis | Large MNG and AITD (GD?) | β-adrenergic blocking agent and thiamazole |
| Bish et al., USA [36] | 45-year-old woman\*\*\* | several hours after CA and urgent coronary artery bypass grafting  | Thyroid storm | GD | Potassium iodide, methimazole through a nasogastric tube, hydrocortisone intravenously, vasopressors |
| Ma et al.,China [94] | 33-year-old woman\* | 1 week after HSG  | Typical symptoms of thyrotoxicosis | ? | Metoprolol. The patient recovered spontaneously |
| Dunne et al., UK [95] | 72-year-old man\* | A few days after elective CA | Left ventricularfailure | TMNG and destructive thyroiditis | Carbimazole |
| Mushtaq et al.,Australia [96] | 76-year-man# | After multiple CT’s during oncological treatment  | AF, lethargy, and weight loss. | ? | Carbimazole (30 mg/day) + lithium 500 mg/day |
| Dave et al., USA [97] | 53-year-old woman# | 2 months after CT  | AF, dizziness, shortness of breath and chest pain.  | Jod-Basedow syndrome | Diltiazem infusion. Spontaneous resolution of Hyper without ATD 16 days later |
| Arlt et al., Germany [98] | 56-year old woman\* | 14 days after CT | Rapid mood swing to mania and subsequent psychotic depression  | Hashimoto thyroiditis | Thiamazole and prednisolone |

\* - Euthyroid prior to ICM exposure; \*\* - Hyperthyroid prior to ICM exposure; \*\*\* - Uncertain thyroid status prior to ICM exposure; # - a patient without any of the typical risk factors for ICM-induced Hyper

CT- computed tomography, CA - coronary angiography, HSG – hysterosalpingography, GD – Graves’ disease, MNG – multinodular goiter, TMNG toxic multinodular goiter, ATD – anti-thyroid drugs