

World Congress on **ENDOCRINE AND DIABETES**

March 14-15, 2022 | Webinar

**Dysfunction of the salivary and lacrimal glands after radioiodine treatment: Preliminary results of a self-controlled study in France****Clemence Baudin<sup>1</sup>, Marie-Odile Bernier<sup>1</sup>, Charlotte Lussey-Lepoutre<sup>2,3</sup>, Alice Bressand<sup>4</sup>, Camille Buffet<sup>5</sup>, Laurence Leenhardt<sup>5</sup>, Fabrice Menegaux<sup>5,6</sup>, Marine Soret<sup>2,7</sup>, David Broggio<sup>8</sup>, Céline Bassinet<sup>9</sup>, Christelle Huet<sup>9</sup>, Gemma Armengol<sup>10</sup>**<sup>1</sup>Institut de Radioprotection et de Sûreté Nucléaire, France<sup>2</sup>Sorbonne University, France<sup>3</sup>INSERM, France<sup>4</sup>AMAREXIA, France<sup>5</sup>University Hospitals Pitié Salpêtrière- Charles Foix, France<sup>6</sup>Sorbonne University, Department of General and Endocrine Surgery, AP-HP, Pitié-Salpêtrière Hospital, F-75013, Paris, France<sup>7</sup>CNRS, INSERM, Biomedical Imaging Laboratory, France<sup>8</sup>Internal Dose Assessment Laboratory, Institut de Radioprotection et de Sûreté Nucléaire, Fontenay-aux-Roses, France<sup>9</sup>Institut de Radioprotection et de Sûreté Nucléaire, Fontenay-aux-Roses, France<sup>10</sup>Universitat Autònoma de Barcelona, Spain

radioiodine (<sup>131</sup>I) therapy of differentiated thyroid cancer, salivary and lacrimal glands may become inflamed, leading to dysfunctions. The incidence of these dysfunctions after <sup>131</sup>I-therapy is poorly known, and no clinical or genetic factors have been identified to date to define patients at risk. The aims of this study are 1) to characterize the dysfunction of salivary and lacrimal glands after <sup>131</sup>I-therapy, 2) to identify risk factors of salivary and lacrimal dysfunction. START (Salivary dysfunction After Radioiodine Treatment) is a prospective study including 139 patients, candidates for a <sup>131</sup>I-therapy in the context of their differentiated thyroid cancer (45 and 94 patients in 1.1GBq and 3.7GBq groups respectively).

The follow-up was based on 2 scheduled visits: immediately before <sup>131</sup>I-therapy (T0) and 6-months after (T6). At each visit, questionnaires on salivary disorders (validated French tool) and dry eye (OSDI® Questionnaire) were administered, and individual salivary flow measurements (without and with salivary gland stimulation) were performed. Descriptive analyses and paired comparisons tests between T0 and T6 were computed. The T6 follow-up started in March 2021, and is still ongoing. Complete information was provided for 122 patients (71% women, mean age=47.4 (±14.3) y). At 6 months after <sup>131</sup>I-therapy, stimulated saliva flow rate decreased (from 6.98 (±3.35) to 6.07 (±3.15) mL/min, p<0.01), as well as the difference between stimulated and unstimulated saliva flow rates (from 1.40 (±0.67) to 1.21 (±0.63) mL/min, p<0.01). Also, after <sup>131</sup>I-therapy, 19% and 21% of the study population reported dry eye or dry mouth feeling, respectively. This work presents preliminary results of the START study, showing a decrease in salivary and lacrimal gland activity after <sup>131</sup>I-therapy. Further analyses will be performed, including saliva biochemical composition, genetic and epigenetic variants, and dose-response relationships (using dosimetric reconstructions).

**Biography**

Clemence Baudin has her expertise in epidemiology, and aims to assess health effects of ionizing radiation using cohorts. She affiliated from Institute de Radioprotection et de Sûreté Nucléaire (IRSN) | IRSN • LEPID - Laboratory of Epidemiology PhD in epidemiology