

**SCIENTIFIC SESSION IV**  
**Poster Sessions**

1. Almanac – Primo Levi’s Last Poem *Yoram Finkelstein , Israel*
2. Chemoprotective effect of lycopene against  $\beta$ -HCH-induced toxicity in human cells *Pier Giorgio Natali, Italy*
3. COVID-19 versus ANTICOVID-19 - Unexpected side-effects of pandemic *Daniela Pelclova, Czech Republic*

## Almanac – Primo Levi's Last Poem

*Yoram Finkelstein (1); Elibu D. Richter (2)*

1. The Hebrew University of Jerusalem, Jerusalem, Israel; 2. Hebrew University-Hadassah School of Public Health and Community Medicine, Jerusalem, Israel

*Background:* There is a close and tragic connection between the fate of Primo Levi and the city of Carpi, where Collegium Ramazzini convenes once a year. To the Carpi train station, familiar to all of us and close to where we gather, the Italian Jews were brought during the holocaust and from there sent to the extermination camps. The Fossoli camp on the outskirts of Carpi was the place where they were expelled from their homes and where they were concentrated before being put on the trains. Primo Levi's poem "Sunset in Fossoli" is currently displayed on the camp's gates.

*Methods/Approach:* His final poem is translated into our Hebrew language and presented alongside the Italian source and the translation into English.

*Results:* Primo Levi, a native of Turin, was a chemist by profession. He belonged to a partisan group captured by the fascist police. Being a Jew, he was sent to Fossoli and from there to Auschwitz. He was one of the few captives who survived and his books documented his experience as a prisoner. He was precise in his use words, in keeping with his scientific background. Even after he became famous as a writer, he continued to work in his scientific work. The massive environmental devastation, caused by uncontrolled industrialization and urbanization, is described in his poetry starting with his first poem "Crescenzago", which he wrote before being arrested. The poem presented here, even though it may not have been intended to be a final, has a parting from the world and summary of Primo Levi's pessimistic worldview regarding human nature and the fate of the earth.

*Conclusions:* Almanac" was published in "La Stampa" on New Year's Day 1987, a few months before his suicide. The poet points, as a prophet of wrath, in protest against environmental destruction.

---

### \* Presenting author profile:

Finkelstein Yoram

Professor Finkelstein is a graduate of the Israel Technological Institute (MD) and the Hebrew University of Jerusalem (PhD). He specialized in Clinical Neurology and was a Neurobiology fellow at the Weizmann Institute of Science. His professional activity combines basic research in Israel and USA with clinical in-hospital neurology and toxicology service, alongside academic teaching and public activities at parliamentary and governmental levels. He established widely accepted standard clinical therapeutic protocols for CNS poisonings.

## Chemoprotective effect of lycopene against $\beta$ -HCH-induced toxicity in human cells

*Pier Giorgio Natali (1); Margherita Eufemi (2); Fabio Altieri (2), Giuliano Paglia (2); Elisabetta Rubini (2,3)*

1.G. D'Annunzio University, Chieti, Italy; 2. La Sapienza University of Rome, Rome, Italy; 3. Université Libre de Bruxelles, Campus Plaine, Brussels, Belgium

**Background:** The  $\beta$ -isomer of hexachlorocyclohexane ( $\beta$ -HCH) is one of the most widespread and environmentally persistent organochlorine pesticides, accounting for about 7.2 tons illegally buried worldwide. Due to its physicochemical properties,  $\beta$ -HCH exhibits high energetic stability and bioaccumulating potential thus representing a significant health hazard in contaminated sites. Epidemiological surveillance programs on a global scale demonstrated a high plasmatic concentration of  $\beta$ -HCH in exposed subjects. Previous cellular and molecular studies performed by our group on both normal and transformed human continuous cell lines (i.e. lungs, liver, prostate) demonstrated that  $\beta$ -HCH activates a wide range of signaling pathways and act as an endocrine disruptor, promoting cellular processes related to carcinogenesis, tumor progression, and chemoresistance. Despite its small size, the  $\beta$ -HCH has a relevant impact on cellular homeostasis thus it is mandatory to explore defense strategies against its multifaceted biological effects.

**Methods/Approach:** A screening of natural substances was carried out on the above-enlisted cell targets to test their capability to counteract  $\beta$ -HCH actions by performing viability assay, flow cytometry, and western blot analysis.

**Results:** Among a wide array of selected compounds, a highly bioavailable natural lycopene (EU patent No. 3052113 -14 772 134.4) shows a dose-dependent significant chemoprotective activity in all the assayed cell lines by contrasting  $\beta$ -HCH induced intracellular responses such as anti-apoptotic and pro-metastasizing events, the increase in ROS production and DNA damage.

**Conclusion:** These experimental outcomes identify lycopene as a potential chemoprotective agent, thus supporting the development and testing of tailored lycopene-enriched formulations for  $\beta$ -HCH exposed individuals. Investigations along this line are ongoing.

**Reference:** Rubini E, Altieri F, Chichiarelli S, Giamogante F, Carissimi S, Paglia G, Macone A, Eufemi M, STAT3a Hub Protein of Cellular Signaling Pathways, Is Triggered by  $\beta$ -Hexachlorocyclohexane. *Int J Mol Sci.* 2018 Jul 20;19(7):2108.

### \* Presenting author profile:

Natali Pier Giorgio

Dr. Natali is Secretary-General of the Mediterranean Task Force for Cancer Control (MTCC), a leading Association in Cancer Prevention and Early Diagnosis, and seats in the Advisory Board of the "Cancer Today Journal" addressing cancer awareness, advocacy, and survivorship issues.

## COVID-19 versus ANTICOVID-19 - Unexpected side-effects of pandemic

Daniela Pelclova (1)

1. Charles University and General University Hospital, Prague, Czech Republic

*Background:* Toxicological Information Centers answer telephone calls on acute human poisonings and give advice on first aid and treatment of all types of intoxications. In 2019, more than 21,000 calls were answered by Prague center for 10.7 million Czech population. In 2020, an outbreak of calls due to accidents with disinfectants occurred during COVID-19 pandemic. Majority of alcohol-based hand sanitizers contain 80% ethanol or isopropanol and less than 1% H<sub>2</sub>O<sub>2</sub> and glycerol, as recommended by WHO.

*Methods/Approach:* The calls on disinfectants were extracted and a comparison within last 5 years (2016–2020) was done, with the focus on 2020 data.

*Results:* The numbers of calls concerning disinfectants from January 1 to July 31 in last 5 years 2016, 2017, 2018, 2019, and 2020 were 18, 25, 33, 41 and 352, respectively. Exposure was accidental in 81% cases, in 4% during their use, in 1% equally following abuse, suicidal and occupational cause, 12% other. Ingestion dominated (71%), followed by inhalation (4%), eye (4%), and skin (1%) exposure, 20% was unspecified. Family was inquiring in 28%, emergency service in 23%, physicians in 18%, patient in 17%, 14 % other subject. 43% of the patients were children, mostly toddlers. 58% subjects were asymptomatic, 24 % had mild symptoms (inebriation or somnolence), 1% severe (coma), in 14% the symptoms were unspecified and in 3 % unrelated. In the age 0-20 years, the males prevailed (35% vs. 21%), females dominated in the age 21+ (28% vs. 16%).

*Conclusion:* The number of accidents with disinfectants in the households increased more than 10fold during the COVID- 19 pandemic in the Czech Republic. Health impacts were minor, however the accidents contributed to the burden of healthcare workers. Similar situation occurred in Australia, Chile, Croatia, Jamaica, Macedonia, Morocco, and Sweden, as reported to the WHO.

Acknowledgement: Progres Q25/LF1 and Q29/LF1

### \* Presenting author profile:

Pelclova Daniela

Professor Daniela Pelclová, M.D., Ph.D., FEAPCCT is emeritus head of the Department of Occupational Medicine, Charles University, Prague and is the Head of the Toxicological Information Centre for the Czech Republic. Her research interests are occupational toxicology, occupational pneumology, diagnostic criteria of occupational diseases and new occupational risks, such as nanoparticles exposure in workers and researchers.

