ESMO 2023

Review of the European Society for Medical Oncology (ESMO) Congress 2023

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RENOWNED for its art, history, and above all, churros, Madrid, Spain, saw thousands flock to the city this October for the European Society for Medical Oncology (ESMO) Annual Congress 2023. Featuring talks by nearly 600 speakers from 155 countries around the globe, this year's congress covered all the latest developments and groundbreaking new research in the field of oncology, with debates, abstracts, and education sessions aplenty during its 4-day run.

The presentations kicked off with a welcome speech and presidential address from ESMO President, Andrés Cervantes, in which he addressed setting new standards in oncology, as well as the importance of inclusivity and global connections for new developments in the field. Bente Mikkelsen, from the World Health Organization (WHO), added to the welcome, briefly speaking about the relationship between WHO and ESMO. An address from Scientific Chair, Silke Gillessen, followed, thanking the many contributors who made this year's ESMO congress one of the best yet.

Recipient of the ESMO Award 2023, Isabelle Ray-Coquard, Claude Bernard University, Lyon, France, went on to give a talk entitled 'The Beauty of Rarity', focusing on how oncologists may find the beauty in rare cancers as we find it in the rarity of other phenomena. Ray-Coquard highlighted the value of working together, at the level of the workplace, as well as on national and global scales. Improved organisation and optimal medical practices are essential, however impossible without the collaboration of physicians and patients alike. Beauty in cancer, she adds, can be found in both the diversity and inclusivity of the disease. Lastly, Ray-Coquard pointed out the ways in which understanding the beauty of rare cancers may help to improve treatment, as well as overall survival rates of patients with more common cancers.

The ESMO Award for Translational Research was given to Nicholas Turner, Ralph Lauren Centre for Breast Cancer Research, London, UK. Turner's consequent talk covered the use of circulating tumour DNA in order to guide breast cancer therapy, and the impact of the heterogeneity of breast cancer on targeted therapies. He discussed how circulating tumour DNA may be used in selecting patients for intensification of first-line therapy, and subsequently moving treatment into the molecular relapse and minimal residual disease setting.

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Further awards were granted to Georgina Long, Melanoma Institute Australia, Sydney, Australia, who spoke about neoadjuvant combination immunotherapy and its feasibility in certain patients with glioblastoma; and Anthony Chan, The Chinese University of Hong Kong, Hong Kong, whose speech addressed the international nature of cancer treatment and the contributions of the East to oncology, before moving on to highlight the prevalence of nasopharyngeal carcinoma, particularly in China, as well as its treatment pathways.

The opening ceremony of ESMO 2023 highlighted many of the most prominent and exciting topics in oncology today, several of which went on to be explored in various oral sessions, proffered paper sessions, or patient advocacy sessions. The common theme throughout each of the talks given throughout the opening ceremony was undoubtedly the importance of working together and helping one another when it comes to diagnosis, treatment, and care.

Read on for our key insights into the ESMO 2023 congress, and come back next year for updates from ESMO 2024, which will be held in Barcelona, Spain, from 13th–17th September.

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Introducing AI to Enhance Cancer Detection and Diagnosis

SESSIONS at the ESMO Congress 2023, held in Madrid, Spain, focused on the potential of artificial intelligence (AI) technologies in helping to improve prompt detection of cancer, and prevent delays in diagnosis across Europe. The application in oncology has been limited, and researchers have been investigating the potential of AI to transform cancer care, and improve patient outcomes. Thus far, digital technologies, such as AI, have been implemented slowly, and practice has been far from uniform.

A qualitative study presented at the ESMO Congress explored the potential of AI to improve cancer detection, through enhancing cancer imaging and time to diagnosis. It is thought that using digital technologies could support prevention programmes by identifying individuals at risk of developing cancer. AI could then intervene upstream, and prioritise those patients for screening based on their medical records. However, Raquel Perez-Lopez, a radiologist at the Vall d'Hebron Institute of Oncology in Barcelona, Spain, stated "these resources remain underutilised," and that there is an insufficient legal framework to allow patient data to be used in such a manner.

AI algorithms have begun to be utilised to analyse data in real-world evidence, such as in genomic reports used to match patients with targeted therapies. This has been achieved through comparing the genetic profiles of hundreds and thousands of patients, and making predictions on the role of certain genes in developing cancer. This is particularly applicable in generating evidence for rare cancers, where traditional clinical trials cannot be undertaken. In a hospital setting, AI could transform data processing in electronic medical records and information systems by summarising large quantities of data and generating research insights, respectively.

Although AI is becoming more common, and shows great promise, oncologists will need to be able to accurately use these tools in order to interpret the evidence generated. The ESMO Guidance for Reporting Oncology Real-World Evidence (GROW) aims to assist with this by standardising oncology research practices through recommendations on how to report real-world data using AI transparently and accurately. With entry of AI into the workflow, the educational needs of physicians need to be met, as the combination of machine and physicians will achieve the best results for patients.

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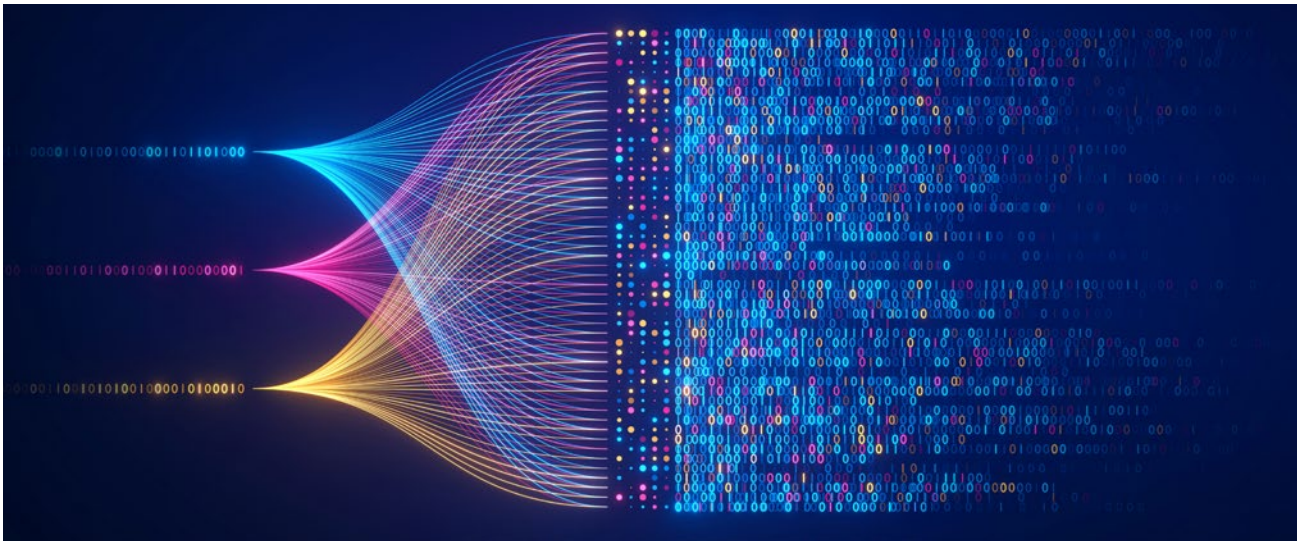

Link Between Air Pollution and Breast Cancer

INCREASED air pollution may lead to a higher risk of developing breast cancer, according to research presented at the ESMO Annual Congress 2023. The study, conducted by Béatrice Fervers, Léon Bérard Comprehensive Cancer Centre, Lyon, France, and colleagues, is amongst the first to take account of the effects of both residential and workplace exposure to air pollution on the risk of breast cancer.

Previous studies into this relationship have only looked at fine particle exposure where females were living, and showed no significant connection to breast cancer risk. This study analysed home and workplace exposure to air pollution in 2,419 females with breast cancer and 2,984 females without breast cancer, between 1990–2011.

Results demonstrated that risk of breast cancer increased by 28% when exposure to fine particle (PM2.5) air pollution increased by 10 μg/m^3, which is roughly equivalent to the difference in PM2.5 particle concentration seen in rural versus urban areas of Europe. Smaller increases in breast cancer risk were also noted in females exposed to high levels of larger particle air pollution (PM10 and nitrogen dioxide). Experts in the field have discovered that these small particles are able to penetrate deep into the lungs and enter the bloodstream, where they may be absorbed into the breast and other tissues.

The findings from this study have emphasised the importance of understanding the role of small pollutant particles in promoting cancer. “There is an urgent need to set up laboratory studies to investigate the effects of these small air pollutant particles on the latency, grade, aggression, and progression of breast tumours,” added Charles Swanton, Francis Crick Institute, London, UK. The team concluded that more research is needed into the connection between air pollution and all cancers, and that policies need to be put in place to reduce PM2.5 particles, not only in Europe, but worldwide.

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Improving the Treatment Possibilities in Gynaecological Cancers

RECENT findings presented at the ESMO Annual Congress 2023, held in Madrid, Spain, have the potential to change the way gynaecological cancers are managed, screened, and treated. The results from the Phase III clinical trial suggest that new therapies for females with cervical, ovarian, and endometrial cancers may delay relapse time and, in certain cases, lengthen survival.

Krishnansu S. Tewari, University of California, Irvine (UCI), USA, and colleagues, presented their research, which aimed to address the unmet needs in gynaecological cancers, commenting: "These trials have set the stage for women with gynaecological cancers to receive state-of-the-art therapies that delay the time to relapse."

A study presented on cervical cancer found that 68% of females who received the immunotherapy drug pembrolizumab, as well as standard treatment, were cancer-free after 2 years, compared to 57% of females given a placebo alongside their standard treatment. Another study tested the usefulness of induction chemotherapy, a method consisting of combining two different chemotherapy drugs before standard treatment with chemotherapy plus radiation. Those who underwent this treatment plan were 35% more likely to be cancer-free at 5 years, and 39% more likely to be alive at 5 years compared to those who received standard treatment alone.

The team went on to present further studies focusing on metastatic cervical cancer, exploring how relapse may be delayed and survival lengthened by combining an antibody and an anti-cancer drug, as well as studies on ovarian and endometrial cancers. Data from a randomised trial showed that senaparib, a novel targeted therapy, may delay time to relapse in patients with recently diagnosed advanced ovarian cancer. Additionally, findings from a further two studies suggested that combining immunotherapy and standard chemotherapy significantly delays relapse in females with advanced or recurrent endometrial cancer.

These results have the potential to significantly change the landscape of cancer treatment. Endometrial cancer is currently the most common gynaecological cancer; however, aggressive forms of the disease are often difficult to treat.

> **"These trials have set the stage for women with gynaecological cancers to receive state-of-the-art therapies."**

These results have a very good chance of leading to regulatory approval of new treatments for gynaecological cancers, according to Tewari. He added that his findings "will allow women struggling with these cancers to live longer and live better." ●

Targeting Tumour Mutations Could Improve Outcomes for Patients with Lung Cancer

NOVEL research presented at the ESMO Congress 2023 in Madrid, Spain, emphasised that targeting tumour cell mutations in patients with non-small cell lung cancer (NSCLC) could cause major changes in treatment. Evidence from multiple clinical trials suggests that a large proportion of patients with NSCLC, the predominant form of lung cancer, would benefit from therapies targeting tumour cell alterations, and are more effective over traditional treatments, such as chemotherapy.

Data collected from the studies revealed that better outcomes were reported with combinations of experimental new drugs targeting tumour cell mutations, over the current therapies. When new drug combinations were used alongside chemotherapy, the outcome was significantly improved when compared to chemotherapy as the sole treatment. Similar results were also observed when chemotherapy was used in combination with ongoing immunotherapy that was maintained pre- and post-surgery. Further results presented also suggested that mutation-targeted treatment may even reduce the need for chemotherapy for some patients. This is particularly valuable for patients with rare tumour alterations who have previously had limited targeted options available to them, such as those with rearranged during transfection-mutated advanced NSCLC.

There was also promising news for those patients with advanced or late-stage NSCLC. For example, a new combination of targeted drugs for patients with late-stage NSCLC with an epidermal growth factor receptor mutation significantly improved progression-free survival. For advanced patients who were previously only eligible for chemotherapy, undertaking chemotherapy alongside antibody conjugates improved progression-free survival compared to current chemotherapy regimens. Although further studies are needed to better appreciate the side effects of such a combination, this may lead to “major changes in the way we care for patients whose previous treatment has stopped working,” said author Alessandra Curioni-Fontecedro, University of Fribourg, Switzerland.

The next step is to better understand the sequences of treatments that will result in the best outcome for patients. Elene Mariamidze, Todua Clinic, Tbilisi, Georgia, stated: “The future of lung cancer care lies in finding the right combination of targeted treatment, or chemotherapy with immunotherapy for each patient.” Therefore, it is important that lung cancer is treated by experts who understand molecular testing and findings to know when and how to target different mutations, establish new targets, and come up with the best treatment plans for patients with lung cancer.

"Targeting tumour cell mutations in patients with non-small cell lung cancer could cause major changes in treatment."