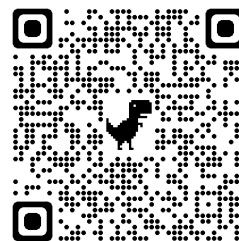


CURRENT RESEARCH TOPICS IN PHARMACY:

An Overview of Novelties in Cancer Treatment

February 15th, 2024



FIRST SESSION

10:00-11:30 AM

Moderator:

Betül
OKUYAN

Welcome

Prof. Hatice Kübra ELÇİOĞLU

Natural products mediated targeting of deregulated signaling pathways for chemoprevention of carcinogenesis and metastasis

Prof. Ahmed Ammad Farooqi

Mesoporous silica nanoparticles: A smart tool for biomedical applications
Assoc. Prof. Fahima Dilnawaz

Phytosomes: A Dynamic Innovation in Cancer Treatment
Assist. Prof. Dhanashree Sanap

SECOND SESSION

13:00-14:30 PM

Moderator:

Ceyda EKENTOK
ATICI

Increased awareness of sex and gender as modulators of cancer risk and outcome is required among cancer researchers

Assoc. Prof. Berna Özdemir

Management of oral chemotherapy-related problems in cancer patients
Pharmacist Elif Aras Atik

Cervical Cancer Treatment and HPV Vaccination: Preventive Priority for Future Generations

Assist. Prof. Sneha Agrawal

THIRD SESSION

15:30-17:00 PM

Moderator:

Esra TATAR

Exploring new drug delivery avenues for targeted and localized cancer therapy through advanced nanotherapeutics
Assist. Prof. Monika Dwivedi

Plectranthus: A Valuable Source of Bioactive Compounds for Therapeutic Applications

Assoc. Prof. Patricia Rijo

Targeted delivery of ligand-displaying exosomes using RNA nanotechnology for breast cancer
Dr. Burcu Üner

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CERVICAL CANCER TREATMENT and HPV VACCINATION: PREVENTIVE PRIORITY FOR FUTURE GENERATIONS

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Cervical carcinogenesis is the complex mechanisms of uncontrolled cellular division that involve HPV gene integration initiates other cellular changes and epigenetic factors. As the HPV infection occurs, the DNA undergoes mutation leading to viral DNA integration and operation with the host DNA synthesis machinery. As a result, replicated viruses escape cellular and immune defense mechanisms while promoting cell proliferation and inhibiting cellular apoptosis. Treatment recommendations depend on the stage of cancer and pregnancy desires. Different stages require different approaches, with early-stage disease offering more treatment options compared to late stages. The list of FDA-approved vaccines for prevention included Cervarix, Gardasil, and Gardasil 9. Whereas for treatment, and combination therapy bevacizumab, bleomycin sulfate, topotecan hydrochloride, pembrolizumab, tisotumab vedotin, and chemotherapy combination contains the drugs carboplatin and paclitaxel (Taxol), gemcitabine and cisplatin respectively. Tailor information to reach diverse populations, addressing cultural taboos and emphasizing the importance of cervical health. Healthcare professionals are trained to effectively advise and guide patients on cervical cancer early detection tests and prevention with proper vaccination.

Women who wish to preserve fertility have additional surgical options available. Surgical options for early-stage disease includes radical hysterectomy with pelvic lymphadenectomy involves removing the uterus, cervix, surrounding tissues, and lymph nodes. It can be combined with radiation and/or chemotherapy for additional control. Radical trachelectomy with uterovaginal reconstruction, this fertility-sparing option removes the cervix and upper part of the vagina while preserving the uterus and allowing future pregnancy. It is suitable for certain cases with small tumors and localized disease. It's true that while preventive HPV vaccines have been a major success story, therapeutic vaccines for treating existing HPV infections and associated cancers still face challenges.

Tumor heterogeneity means tumors can exhibit variability in antigen expression, meaning targeting just E6 and E7 might not be sufficient for all cases. Therefore, researchers are exploring several promising avenues to improve therapeutic HPV

vaccines by targeting additional antigens which includes exploring other viral proteins beyond E6 and E7, as well as host molecules involved in tumor progression. Combining approaches by using therapeutic vaccines in conjunction with other anti-cancer modalities like chemotherapy or radiation therapy might enhance efficacy. Personalized vaccines which work by tailoring vaccines to individual patient tumors based on their specific antigen expression profile could hold promise for better immunotherapy responses. Developing vaccines that target a wider range of HPV genotypes could offer broader protection against HPV-associated cancers.

Curcumin, gingerol, taxol, arctiin, epigallocatechin-3-gallate, notoginsenoside, fisetin, glycyrrhizin, lycopene, emodin, protodioscin, eugenol, oleanolic acid, corosolic acid kaempferol, piperine, apigenin, naringenin these are few examples of phytoconstituents which are reported for their promising preventive and therapeutic activity in cervical cancer. Diet rich in vitamins, minerals, polyphenols and flavonoids are suggested as they provide excellent antioxidant activity.

Insufficient understanding of cervical cancer, its risk factors, prevention, and early detection, coupled with limited access to information and healthcare services, contributes significantly to its burden in both rural and urban areas. By prioritizing knowledge, awareness, and prevention by shots of HPV16/18 vaccines will collectively work towards reducing the global burden of cervical cancer and saving lives.

Keywords: Cervical cancer; HPV infection; HPV16/18 vaccine.

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