SCHOLARLY PUBLICATIONS
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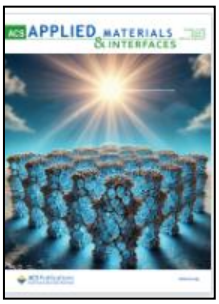
Journal Name: **ACS Applied Materials and Interfaces** **IF: 8.5**

Title: Emissive Lipid Nanoparticles as Biophotonic Contrast Agent for Site-Selective Solid Tumor Imaging in Pre-Clinical Models

Author: Prasad R.; Kumari R.; Chaudhari R.; Kumar R.; Kundu G.C.; Kumari S.; Roy G.; Gorain M.; Chandra P.

Details: Volume 16, Issue 40, October 2024

Abstract: Small organic dye-based fluorescent agents are highly potent in solid tumor imaging but face challenges such as poor photostability, nonspecific distribution, low circulation, and weak tumor binding. Nanocarriers overcome these issues with better physicochemical and biological performance, particularly in cancer imaging. Among the various nanosized carriers, lipid formulations are clinically approved but yet to be designed as bright nanocontrast agents for solid tumor diagnosis without affecting surrounding tissues. Herein, indocyanine green (ICG) encapsulated targetable lipid nanoparticles (698 ICG/LNPs) as safe contrast agents (∼200 nm) have been developed and tested for solid tumor imaging and biodistribution. Our findings reveal that nanoprecipitation produces ICG-LNPs with a unique assembly, which contributes to their high brightness with improved quantum yield (3.5%) in aqueous media. The bright, optically stable (30 days) biophotonic agents demonstrate rapid accumulation (within 1 h) and prolonged retention (for up to 168 h) at the primary tumor site, with better signal intensity following a one-time dose administration (17.7×10^9 LNP per dose). Incorporated folic acid (735 folic acid/LNPs) helps in selective tumor binding and the specific biodistribution of intravenously injected nanoparticles without affecting healthy tissues. Designed targetable ICG-LNP (634 MESF) demonstrates high-contrast fluorescence and resolution from the tumor area as compared to the targetable ICG-liposomal nanoparticles (532 MESF). Various in vitro and in vivo findings reveal that the cancer diagnostic efficacy elicited by designed bright lipid nanoparticles are comparable to reported clinically accepted imaging agents. Thus, such LNPs hold translational potential for cancer diagnosis at an early stage.



URL: https://pubs.acs.org/doi/10.1021/acsami.4c08273

SCHOLARLY PUBLICATIONS
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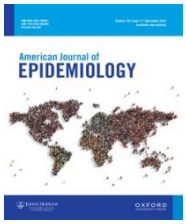
Journal Name: American Journal of Epidemiology **IF: 5.0**

Title: Cause-specific survival analysis of gynecological cancers among non-White population: a SEER based study

Author: Priyadarshini, S; Swain, PK; Padhee, S; Agarwal, K

Details: October 2024

Abstract: Gynecological cancers are the most prevalent cancers in women, making them a major public health concern for decades. Health disparities and inequalities in access to care among different racial groups have been a major concern in the US healthcare system. This study was aimed at investigating cause-specific survival rates among non-White women with gynecological cancer and to identify risk factors associated with gynecological cancer mortality by race. The Kaplan-Meier method was used to calculate 5-year survival estimates and various risk factors for gynecological cancer among non-White women were analyzed using Cox proportional hazard model. The findings of this study highlight the need for targeted interventions to improve access to care and reduce health disparities for non-White women with gynecological cancer. This article is part of a Special Collection on Gynecological Cancer.



URL: https://academic.oup.com/aje/advance-article
abstract/doi/10.1093/aje/kwae161/7699735?redirectedFrom=fulltext&login=false

SCHOLARLY PUBLICATIONS
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Journal Name: Gut Pathogens **IF: 4.4**

Title: Infectious etiology of intussusception in Indian children less than 2 years old: a matched case-control analysis

Author: Praharaj I., Reddy S.N., Nair N.P., Tate J.E., Giri S., Thiyagarajan V., Mohan V.R., Revathi R., Maheshwari K., Hemavathy P., Kumar N., Gupte M.D., Arora R., Senthamizh S., Mekala S., Goru K.B., Pamu P., Badur M., Pradhan S., Dash M., Mohakud N.K., Ray R.K., Gathwala G., Gupta M., Kanojia R., Gupta R., Goyal S., Sharma P., Mathew M.A., Kochukaleekal Jacob T.J., Sundaram B., Girish Kumar C.P., Dorairaj P., Pitchumani R., Maniam R., Kumaravel S., Jain H., Goswami J.K., Wakhlu A., Gupta V., Liu J., Houpt E.R., Parashar U.D., Kang G.

Details: Volume 16, Issue 1, December 2024, Article number 61

Abstract: Enteric infections are hypothesized to be associated with intussusception in children. A small increase in intussusception following rotavirus vaccination has been seen in some settings. We conducted post-marketing surveillance for intussusception following rotavirus vaccine, Rotavac introduction in India and evaluated association of intussusception with enteric pathogens. Methods: In a case-control study nested within a large sentinel hospital-based surveillance program in India, stool samples from 272 children aged less than 2 years admitted for intussusception and 272 age-, gender- and location-matched controls were evaluated with Taqman array card based molecular assays to detect enteric viruses, bacterial enteropathogens and parasites. Matched case-control analysis with conditional logistic regression evaluated association of enteropathogens with intussusception. Population attributable fractions (PAF) were calculated for enteropathogens significantly associated with intussusception. Results: The most prevalent enteropathogens in cases and controls were enteroaggregative Escherichia coli, adenovirus 40/41, adenovirus C serotypes and enteroviruses. Children with intussusception were more likely to harbor adenovirus C serotypes (adjusted odds-ratio (aOR) = 1.74; 95% confidence interval (CI) 1.06–2.87) and enteroviruses (aOR = 1.77; 95% CI 1.05–2.97) than controls. Rotavirus was not associated with increased intussusception risk. Adenovirus C (PAF = 16.9%; 95% CI 4.7% − 27.6%) and enteroviruses (PAF = 14.7%; 95% CI 4.2% − 24.1%) had the highest population attributable fraction for intussusception.

URL: https://gutpathogens.biomedcentral.com/articles/10.1186/s13099-024-00659-z