Volume 293, 10 January 2019, Pages 21-35

Reviewing two decades of nanomedicine implementations in targeted treatment and diagnosis of pancreatic cancer: An emphasis on state of art

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Abstract:

Pancreatic cancer is nowadays the most life-threatening cancer type worldwide. The problem of poor diagnosis, anti-neoplastics resistance and biopharmaceutical drawbacks of effective anti-cancer drugs lead to worsen disease state. Nanotechnology-based carrier systems used in both imaging and treatment procedures had solved many of these problems. It is critical to develop advanced detection method to save patients from being too late diagnosed. Targeting the pancreatic cancer cells as well helped in decreasing the side effects associated with normal cells destruction. Drug resistance is another challenge in pancreatic cancer management that can be solved by thorough understanding of the microenvironment associated with the disease to design creative nanocarriers. This is the first article to review multifaceted approaches of nanomedicine in pancreatic cancer detection and management. Additionally, mortality rates in selected Arab and European countries were illustrated herein. An emphasis was given on therapeutic and diagnostic challenges and different nanotechnologies adopted to overcome. The four main approaches encompassed nanomedicine for herbal treatment, nanomedicine of synthetic anti-cancer drugs, metal nanoparticles as a distinct treatment policy and nanotechnology for cancer diagnosis. Future research perspectives have been finally proposed. © 2018

Reference:

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