
Original Article

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Interferon and Anti-tumor Resistance

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Abstract

The antitumor resistance of the organism largely depends on the functional adequacy of all protective and regulatory mechanisms that ensure the preservation of its homeostasis. It is also known that the initiation of malignant growth is associated with a violation of regulation at the level of the organism and at the cellular and molecular level, as a result of which favorable conditions are created for the emergence of a transformed cell /ok/, for its proliferation and for the escape of a clone of malignant cells from the supervision of the mechanisms controlling tumor growth. Naturally, an increase in antitumor resistance should be associated with attempts to restore the indicated mechanisms, with effects aimed at stabilizing the cellular genome, strengthening the control of cell proliferation, and activating the mechanisms of antitumor immune surveillance. From a modern standpoint, all these requirements are met by a unique group of proteins - interferons, first described by researchers as antiviral agents. At present, the involvement of interferon in the natural regulation of gene expression, cellular functions, and intercellular relationships is beyond doubt. Since all interferon subtypes S and I have largely similar biological activity, the term "interferon" will be used hereinafter for simplicity. Research interest in interferon has increased particularly following the establishment of its anticarcinogenic and antitumor effects, which are due both to its direct influence on tumor cells and to its impact on the body's protective and regulatory mechanisms. It has been established, in particular, that interferon has the ability to inhibit cell division, modify the surface properties of tumor and normal cells, and modify the cellular phenotype, leading to the reversal of transformation and a decrease in the oncogenicity of tumor cells. Interferon modifies the interactions between cells and with various biologically active substances: antibodies, lymphokines, hormones, growth factors, etc. Moreover, according to modern concepts, interferon itself can be classified as a polypeptide non-endocrine hormone, the so-called negative growth factor /in contrast to positive growth factors that initiate and support cell proliferation. Data from recent years indirectly indicating the antimutagenic action of interferon are significant.

Keywords: Interferon; antitumor; cancer immunotherapy; tumor suppression

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Original Article

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Preserving Descending Colon Viability in Rectal Resection: A Technical Review

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Abstract

The relevance of this study is determined by the high incidence of rectal cancer in the structure of oncological morbidity, the high percentage of postoperative complications and mortality, the unsatisfactory locking function of the anal sphincter after abdominoanal resection of the rectum with pulldown of the colon, the need to search for the ways to reduce postoperative complications and mortality after such surgical interventions. The most common complications after abdominoanal resection of the rectum are necrosis of the pulled-down intestine. According to the generally accepted opinion, frequent immediate and late complications after surgery are associated with necrosis of the pulled-down intestine. Some authors associate the reduction of postoperative complications with the normalization of blood circulation in the descending intestine.

Keywords: Necrosis prevention; descending colon; abdominoanal resection; rectal surgery; intestinal ischemia

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Original Article

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Genetic and Clinical Predictors of Disease Progression in Pediatric Steroid-Resistant Nephrotic Syndrome and Response to Immunosuppression

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Abstract

Prevention of the progression of chronic kidney diseases and the search for effective preventive therapeutic approaches are the most acute medical and social problem, which is one of the priorities of the national health care systems of most countries in the world. According to epidemiological studies, the annual incidence of nephrotic syndrome is 2-7 cases per 100,000 children, with a cumulative prevalence of 12-16 cases per 100,000 children. Consolidated data on the incidence and prevalence of nephrotic syndrome in children in Russia are currently unavailable. Steroid-resistant nephrotic syndrome is observed in 10-20% of children with nephrotic syndrome. The problems of steroid-resistant nephrotic syndrome progression in children remain one of the pressing issues in global pediatric nephrology, which is determined by the high incidence of chronic renal failure, observed in more than 50% of patients over 5-10 years. According to international registries, steroid-resistant nephrotic syndrome accounts for 15-29% of terminal chronic renal failure in children, being the leading acquired kidney disease. Nephrotic syndrome is a symptom complex consisting of severe proteinuria greater than 3 g/24 h (>50 mg/kg/24 h or >40 mg/h/1.73 m), hypoalbuminemia (<25 g/l), edema, and hyperlipidemia. Steroid-resistant nephrotic syndrome is characterized by persistent proteinuria after 6-8 weeks of therapy with prednisolone at a dose of 2 mg/kg/24 h (maximum 60-80 mg/24 h).

Keywords: Nephrotic syndrome; children; genetic patterns; disease progression; immunosuppressive therapy

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Original Article

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Early complications of caesarian sections among women delivered in Three Hospitals in Kerbala, 2024

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Abstract

Background: Cesarean section is a lifesaving procedure but carries significant maternal and neonatal risks. Rising rates, often driven by non-medical factors, contribute to complications like hemorrhage, infection, and future pregnancy issues.

Objective of the study: This study aims to investigate the socio-demographic and obstetrical characteristics of women undergoing C-section deliveries, as well as the complications encountered during and after the procedure.

Patients and Methods: A total of 335 pregnant women who underwent caesarean sections were selected using a random sampling approach to ensure a representative sample of post-operative patients. The data collected through structured questionnaire-based interview interviews. Socio-demographic factors, obstetrical and surgical history and complications were collected, categorized and analysed.

Results: Among the 335 cesarean births, many mothers were overweight or anemic, and obstetric complications such as pre-term premature rupture of membranes (PPROM) and postpartum hemorrhage (PPH) were frequent. Surgical and anesthetic mishaps occurred more often in government hospitals. Newborns most often faced jaundice and breathing difficulties, and spinal anesthesia was the technique used in most cases.

Conclusion: Cesarean-related complications are still common, and they occur most often in government hospitals. The problems cluster around three main risk factors: emergency surgery, limited maternal education, and maternal overweight.

Keywords: Caesarian section, Epidemiology, Complications.

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Original Article

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Biochemical and genetic indicators of individual sensitivity to the effects of industrial aerosols

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Abstract

Many modern achievements of medical science are based on the study of genetic mechanisms of disease development. In general pathology, the fruitfulness of this approach was demonstrated in the study of rheumatism, bronchial asthma, endometriosis and other diseases. In the field of occupational diseases, this direction is represented by isolated studies on pneumoconiosis among miners, asbestosis, vibration disease, certain genetic and biochemical characteristics of the organism that determine the predisposition to the development of the indicated types of occupational diseases were identified. Currently, occupational medicine strives not only to understand the mechanisms of the body's general responses to occupational factors, but also the specific manifestations in individual individuals. Scientific advances in this field have led to the recognition of the need to study "individual biochemical profiles". Respiratory diseases are a common cause of morbidity and mortality. Among chronic occupational diseases, pneumoconiosis and bronchitis are among the most common. Therefore, preventing bronchopulmonary diseases in individuals exposed to industrial aerosols is an important medical, social, and economic task. It is known that not all workers develop pneumoconiosis despite exposure to dust. The duration of exposure before the disease develops, as well as the clinical manifestations, severity, and complications, vary. The development of the disease is determined not only by the damaging properties of the dust (chemical composition, concentration, duration of exposure), but also by the characteristics of the individual exposed to it.

Keywords: Industrial aerosols; individual sensitivity; biochemical markers; genetic indicators; occupational health

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