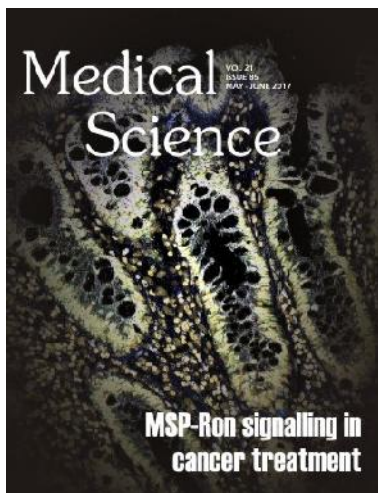


# Medical Science

## About the Cover



Macrophage stimulating protein (MSP)/HGF-linked protein (HGFL) was simultaneously discovered as a protein stimulating macrophage activity and hepatocyte growth factor (HGF) family protein. MSP is produced by epithelial cells, and its receptor, Ron (Recepteur d'origine nantais), is expressed in stromal cells. Ron and Met, an HGF receptor, are also both family receptors. However, HGF is produced by stromal cells, and Met plays some roles on epithelial cells. Therefore, HGF-Met and MSP-Ron signalling show a reciprocal correlations under physiological condition. Although HGF-Met is a well-known signalling promoting cancer, RON overexpression was also observed in some human cancers that originated from epithelial cells, and SP-Ron signalling has important activities in cancer development. MSP induces invasion, metastasis, and drug resistance of cancer cells. Moreover, Ron interacts with Met and the EGF receptor, and they exert various effects in cooperation to achieve malignancy. Ron could be an important target of cancer therapy using monoclonal antibodies and small chemical inhibitors. In this review, we focus on the roles of MSP in cancer development and therapies against MSP-Ron-signal-positive cancers (Ref: Takashi Kato. MSP-Ron signalling in cancer treatment. *Medical Science*, 2017, 21(85), 114-118); (Image: s3-eu-west-1.amazonaws.com).

### **MSP-Ron signalling in cancer treatment**

Takashi Kato

Macrophage stimulating protein (MSP)/HGF-linked protein (HGFL) was simultaneously discovered as a protein stimulating macrophage activity and hepatocyte growth factor (HGF) family protein. MSP is produced by epithelial cells, and its receptor, Ron (Recepteur d'origine nantais), is expressed in stromal cells. Ron and Met, an HGF receptor, are also both family receptors. However, HGF is produced by stromal cells, and Met plays some roles on epithelial cells. Therefore, HGF-Met and MSP-Ron signalling show a reciprocal correlations under physiological condition. Although HGF-Met is a well-known signalling promoting cancer, RON overexpression was also observed in some human cancers that originated from epithelial cells, and SP-Ron signalling has important activities in cancer development. MSP induces invasion, metastasis, and drug resistance of cancer cells. Moreover, Ron interacts with Met and the EGF receptor, and they exert various effects in cooperation to achieve malignancy. Ron could be an important target of cancer therapy using monoclonal antibodies and small chemical inhibitors. In this review, we focus on the roles of MSP in cancer development and therapies against MSP-Ron-signal-positive cancers.

*Medical Science*, 2017, 21(85), 114-118

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### RESEARCH

#### **Reduced expression profile of neurotrophins and their cognitive receptors in the hippocampal region of postmortem suicidal brain**

Ritabrata Banerjee, Anup K. Ghosh, Balaram Ghosh, Somnath Bhattacharya, Amal C. Mondal

Suicide is a major public health concern. Although the authors of many studies have examined the neurobiological aspects of suicide, the molecular mechanisms associated with suicidal behavior remain poorly understood, there is increasing evidence that brain-derived neurotrophic factor (BDNF) and Nerve growth factor (NGF) are involved in the pathophysiology and treatment of depression through binding and activating their cognate receptors trk B and trk A respectively. The present study was performed to examine whether the expression profiles of BDNF and/or trk B as well as NGF and/or trk A were altered in postmortem brain in subjects who commit suicide and whether these alterations were associated with specific psychopathologic conditions. These studies were performed in hippocampus obtained in 20 suicide subjects and 20 non-psychiatric control subjects. The protein and mRNA levels of BDNF, trk B and NGF, trk A were determined with Western Blot and RT PCR respectively. Given the importance of BDNF and NGF along with their cognate receptors in mediating physiological functions, including cell survival and synaptic plasticity, our findings of reduced expression of BDNF, Trk B and NGF, Trk A in both protein and mRNA levels of postmortem brain in suicide subjects suggest that these molecules may play an important role in the pathophysiological aspects of suicidal behavior. An unique parallel decrease of the mRNA and protein levels of BDNF, TrkB, NGF and TrkA in suicide victims might be of relevance to its pathophysiology of depression.

*Medical Science*, 2017, 21(85), 119-127

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### CASE REPORT

#### **Metastasis of colon cancer to the thyroid: a case report and review of the literature**

Zayd.Jastaniah, Pierre Truntzer, Christian Borel, Jean Carvalho

In France, colorectal cancer is the third most common cancer in males and the second most common cancer in females. Thyroid metastasis from CRC is rare. The incidence of metastasis to the thyroid gland in autopsy series varies from 4% to 9%, while in clinical series the prevalence of intra-thyroid metastasis is not more than 1%. We present a case of a fifty years female patient who presented a right neck pain. Clinical and imaging examinations found an isolated right thyroid metastasis five years after the initial diagnosis of colon cancer. The thyroid metastasis was surgically resected and had adjuvant chemoradiotherapy was delivered. All patients with history of malignancy with thyroid nodule should be investigated for secondary deposits even after many years of cancer treatment. Fine nodule aspiration is a sensitive method of diagnoses. Surgical resection followed by radiation and chemotherapy should be proposed in a curative intent. Radiotherapy alone should be considered for palliation goal.

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### ANALYSIS

#### **Gun violence in north-western India**

Naveen K. Simatwal, Shantilal Pargi, Damyanti Ujwal, Prem Chand Meena, Gyan Prakash Gaur, Vinod k. Garg, Gahlot RK

Gun violence is one of the important indicators of level of social and mental health. It is a global problem and causes considerable hazards in a developing country like India, where poverty and violence are not uncommon. Firearms and their use are modifiable risk factors, which if recognized and addressed, could help decrease the burden of violent death. Our Hospital based Descriptive Observational Study was aimed to assess the socio-demographic parameters of firearm injuries cases in North-Western India,

conducted at the Department of Forensic Medicine S.M.S. Medical College, Jaipur during May 2014 to October 2015 period. The burden of gunshot violence is 0.49% (115 cases). Males outnumber females (9:1). Majority of victims were in the second and third decade age group. Incidence is higher in married, literate and rural population. Homicides were the most common manner of death. Property disputes, revenge, robbery are common underlying factors. Educational efforts, individual and community approaches are needed to alleviate firearm injuries. The epidemiologic reviews in this research shall enhance our understanding of various forms of gun violence, inform interventions, and help chart directions for future research.

*Medical Science, 2017, 21(85), 137-142*

## RESEARCH

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### **The situation of Crimean – Congo Hemorrhagic fever in Albania from 2013-2016**

Krasniqi Marsida, Bino Silvia

Crimean-Congo hemorrhagic fever is a zoonotic viral disease that can be a serious threat to humans. The transmission of the virus is by ticks bite, by direct contact with blood or tissues from infected animals and by humans to humans by infected persons. Clinical signs can vary from asymptomatic to clinical signs as high fever, myalgia, severe malaise, gastrointestinal symptoms, bleeding. CCHFV is endemic in large parts of the world and is regarded as a public health problem in these regions. The aim of this study is to identify the situation of Crimean Congo hemorrhagic fever in Albania and to evaluate the clinical forms of the disease in Albania. This study was conducted at the Institute of Public Health in Tirana in cooperation with the University Hospital Mother Teresa in Tirana and with district hospitals (Kukes, Has, Ersekë, Berat) where cases with CCHF were found. Confirmation of the diagnosis was done in the laboratory of the Institute of Public Health in Tirana. The cases with CCHF were found in Has and Kukes. The symptoms of the patients were fever, high temperature, physical weakness, cephalgia, nausea and vomiting.

*Medical Science, 2017, 21(85), 143-149*

## ANALYSIS

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### **An analysis of Prevalence of Supernumerary Teeth in Population of Bhagalpur District of Bihar**

Vishal, Sinha DK, Kumar C

The Aim of the study was to determine the prevalence of Supernumerary teeth in population of Bhagalpur district of Bihar. Patients which came for routine Dental checkup and treatment in JLNMC&H during October 2016 to mid-April 2017 were included in the study. Supernumerary teeth were detected by clinical examination and also by radiographs. In total 4110 patients who were screened in the Period, prevalence of supernumerary teeth was 1.3% of the Population, Frequency of occurrence of Supernumerary tooth were mesiodens, followed by premolars, paramolars and distomolars respectively. Malalignment and dental decay were most common manifestation due to the presence of supernumerary teeth. Prevalence of Supernumerary teeth is 1.3% which is comparable with other studies. Extraction of these teeth was advised as soon as they were diagnosed.

*Medical Science, 2017, 21(85), 150-154*

## RESEARCH

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### **CRP elevations in patients with schizophrenia**

Shashi K. Agarwal

There is a compelling body of evidence relating subclinical chronic inflammation and schizophrenia in adults. Prenatal infections during pregnancy have been shown to be associated with an increased risk of schizophrenia in the offspring during adulthood. Inflammation in these patients may also be contributing to the high burden of metabolic and cardiovascular diseases experienced by these patients. CRP is a sensitive, inexpensive and easy biomarker for diagnosing chronic low grade inflammation. This study reveals that one half of our adult patients with schizophrenia suffer from chronic low grade inflammation as evidenced by elevated CRP levels. These findings may have therapeutic and prognostic implications.

*Medical Science, 2017, 21(85), 155-159*