

100 unrelated individuals from Turkey. In conclusion, the 10 new non-CODIS loci in Turkey are suitable for the forensic testing and population data is also available.

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A NOVEL D-TI-A TYPE FLUORESCENCE DYE FOR SELECTIVE SENSING OF PICRIC ACID IN AQUEOUS MEDIA

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Nitroaromatics were widely used in the fields of explosives, fireworks, pharmaceutical industries, dyes, and their residues often cause much damages. Among the nitroaromatics explosives, 2,4,6-Trinitrophenol (TNP) is the typical one. It has been widely used in World War I as an explosive. However, it should be noted that TNP can be a risk to human health and cause serious problems for environment. Therefore, it is necessary to develop some reliable and realtime methods for the detection of trace TNP with satisfactory sensitivity and selectivity to prevent terrorist threats and environmental pollution. Many fluorescent probes have been reported to meet the demand for the specific detection of TNP. To the best of our knowledge, only a limited number of intramolecular charge transfer (ICT)-based probes for TNP have been reported. The ICT-based probes is desirable for ratiometric probes, whose self-calibration effect of two excitation/emission bands can eliminate the interference of photobleaching and deviated microenvironments. In our research, we design a ICT-based probe for the detection of TNP in water solution. The probe exhibited a selective, sensitive, and ratiometric fluorescent response to TNP in aqueous solution.

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READING PATHOLOGY IN BONES FOR CREATING THE BIOLOGICAL PROFILE: THE CASE OF DIABETES

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When creating a biological profile, the correct interpretation of bone lesions is fundamental since it may lead to the identification of diseases such as diabetes, cancer, gout or arthritis, which in turn can serve as crucial traits for identification. The present pilot study aims to verify the characteristic features of skeletal lesions on diabetics. Diabetes mellitus is one of the most widespread diseases, currently affecting more than 415 million people worldwide. Much is therefore known about the manifestation of this disease from a physiopathological, clinical and radiological point of view; however, from the forensic anthropological perspective, the macroscopic aspects of the consequences of diabetes on the skeleton are poorly described. This study aims to investigate the manifestation of diabetes mellitus on 19 skeletons of diabetic patients (and one negative control case), selected from the documented Milano Identified Skeletal Collection, according to their known pathological history. Aim of this investigation is to identify and describe the macroscopic signs left on dry bones by the diabetic condition, through an osteological analysis. Such skeletons were initially cleaned and studied from an anthropological point of view. After a clear revision of the main lesions described in the clinical practice, the same or corresponding manifestations (periostitis, lytic lesions, erosion, remodeled fractures, osteomyelitis and osteoarthritis) were sought, identified and described, as well as their localization on the skeleton and frequency of appearance. The results show that the lower limbs are the first areas involved in the diabetic condition, appearing as lytic lesions (50% of cases), erosion (40%) and, to a lesser extent, remodeling (30%), periostitis (25%) and deformation (5%). Such lesions can virtually affect

any bone of the distal foot, but the most frequently affected areas are the head of the 1° and 5° metatarsal and the distal phalanx of the great toe; however, the severity of the extension of the pathology varies among the individuals considered, from cases without signs to cases of amputation at the femur. Only in 20% of cases the hand is also affected, in particular the 1° metacarpal, displaying alterations of the carpo-metacarpal joint. However, the most difficult aspect of the forensic anthropological practice is to differentiate similar manifestation caused by different pathologies. The present investigation therefore also attempted to provide initial and macroscopic guidelines for better performing a differential diagnosis between diabetes and other diseases, such as gout, leprosy, septic arthritis, osteomyelitis and periostitis, consequent to non-specific infections, and trauma.

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A COMPARATIVE STUDY ON UNNATURAL FEMALE DEATHS FROM TWO PROVINCES IN SRI LANKA

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Introduction: Unnatural deaths are defined as deaths not caused by disease or aging but by external causes such as injury/trauma or poisoning etc., where the manner/ circumstance could be homicidal, suicidal or accidental or at times even undetermined. Death due to violence not only affects the family, but also the community and society. Provided many deep rooted gender perceptions and assumptions regarding females, a death of a female due to violence is highlighted as well as morally condemned due to her care-giver role in the society. **Objectives:** To describe the demographic associations of different types, circumstances of unnatural deaths of females and their etiologies as well as the association of presence of sexual and gender based violence to different circumstances in Western (WP) and North Central (NCP) Provinces.

Methodology: A retrospective descriptive study on unnatural female deaths in WP and NCP was carried out employing convenient sampling method. Records of Inquirers into Sudden Deaths, post-mortem reports and police information for a duration of three years (2013-2015) were perused following obtaining approval from relevant stake holders. Data was obtained using a pro-forma and analysis was done using Statistical Package for Social Sciences 16. **Results:** The analysis of 131 deaths from WP and 128 from NCP revealed that there were more deaths in the NCP in the age category of 40-60 years (32%) where as in the WP more deaths were recorded in 20-40 age (46%). In the WP 36% of deaths were from urban areas while 3% were rural. However, in the NCP more deaths were from rural (81%) areas while only 5% were from urban. The analysis of the types of deaths in two provinces revealed that deaths due to poisoning was statistically significant in NCP ($p=0.000$) with the commonest poison being plant in origin. The underlying circumstance was suicide due to love affair or family disputes. However asphyxial deaths were statistically significant ($p=0.016$) in WP. The commonest underlying reasons for deaths in NCP were family disputes followed by land disputes whereas in WP it was family disputes followed by financial problems. **Conclusions** The pattern of unnatural deaths of females in two provinces differ demographically as well as by the etiology. Poisoning was significant in NCP while it was asphyxia in WP. Although family disputes were the common reason for deaths in both groups land disputes were more in NCP while financial problems were more in the WP.

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