முத்தமிழறிஞர் மொழிபெயர்ப்புத் திட்டம்

தோல் மருத்துவம்

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முன்னுரை

தோல் நோய்கள் மனிதர்களை பாதிக்கும் நோய்களில் பரவலாக காணப்படும் நோய் வகையாகும். தோல் நோய்கள் எல்லா வயதினரையும் பாதிக்கலாம். மற்ற நோய்கள் போல் இல்லாமல் தோல் நோய்கள், தோலின் நிறத்தால் பெரிதும் வேறுபடுகின்றன. அதனால், வெளிர் நிறம் உடைய ஐரோப்பியரிடம் காணப்படும் தோல் நோய்கள், இந்தியர்களிடம் ஏற்படும் வியாதியிலிருந்து மாறுபடுகிறது. உதாரணத்திற்கு வெண்படை அல்லது வெண் தேமல், வெளிரிய தோலில் மாற்றமாக தெரியாது, ஆனால் நம் தோலில் எளிதாக 'பளிச்' என்று தெரியும். மேலை நாட்டில் காணப்படும் தோல் வியாதிகள் நமது நாட்டில் காணப்படும் நோய்களில் இருந்து வேறுபடுகிறது. ஒரு நாட்டின் தட்பவெட்பம், காற்றுநிலை, நில அமைப்பு போன்றவை, தோல் நோயில் பெரும் தாக்கத்தை ஏற்படுத்துகிறது. தோல் நோய்கள் தனித்துறையாக சென்ற நூற்றாண்டு தான் இந்தியாவில் காலூன்றியது. இன்று அது விரிவடைந்து ஒரு சிறப்பு துறையாக விளங்குகின்றது. இந்த துறையில் பல முன்னேற்றங்கள் அடைந்து அது தோல் நோய்கள் மட்டுமல்லது அழகு கலையும் அதை சார்ந்த சிறப்பு சிகிச்சைகளும் உட்பிரிவுகளாக கொண்டுள்ளது. இந்த நூற்றாண்டில் லேசர் (கிளர்கதிர்) மற்றும் தோல் நோய் அறுவை சிகிச்சையால்) அசுர வளர்ச்சி அடைந்துள்ளது இந்த துறை.

இந்த நூல் இந்திய மாணவர்கள், அதிலும் தமிழ்நாட்டு மருத்துவ மாணவர்களின் தேவைக்கேற்ப வடிவமைக்கப்பட்டுள்ளது. இந்நூலில் பல பகுதிகள் உள்ளன. இந்த நூலை எழுதுவதற்கு அரை நூற்றாண்டுகளுக்கு முன்னால் டாக்டர். தம்பையா, (முன்னால் தோல்துறை பேராசிரியர், சென்னை மருத்துவக் கல்லூரி) அவர்கள் எழுதிய 'தோல் நோய்கள்' புத்தகம் பெரிதும் பயன்பட்டது. மேலும் பல புதிய, நவீன மருத்துவக் கருத்துகள் இந்த புத்தகத்தில் உள்ளன. இந்த புத்தகத்தில் பயன்படுத்தப்பட்டுள்ள புகைப்படங்கள் நான் பார்த்து மருத்துவம் செய்தவர்கள், மற்றும் இந்த புத்தகத்தில் பயன்படுத்தியுள்ள தமிழ் மருத்துவச்சொற்கள், மருத்துவக் கலைச்சொற்கள் என்ற புத்தகத்தில் இருந்து எடுத்து ஆளப்பட்டுள்ளது.

இந்த புத்தகம் நவீன மருத்துவ முறைகள் பற்றியும் விளக்கப்பட்டுள்ளது. படிக்கும் மாணவர்களுக்கு புரிந்து உதவுவதற்காக ஆங்கிலத்தில் வியாதிகள் பெயர்கள் கொடுக்கப்பட்டுள்ளது.

என்னுரை

தமிழில் மருத்துவம் படிப்பு என்பது நினைவாகும் நாள் வெகுதூரத்தில் இல்லை. அந்நாள் தமிழர்களின் வாழ்வில் ஒரு திருப்புமுனை நாளாக அமையும் என்பதில் சந்தேகமில்லை.

தமிழில் தோல் மருத்துவம் பற்றிய இந்த நூல் தோலில் ஏற்படும் பல வியாதிகளை பற்றி மருத்துவ மாணவர்களுக்கு பேருதவியாக இருக்கும்.

இந்த நூல் நம் நாட்டில் காணப்படும் தோல் நோய்களை மனதில் கொண்டு எழுதப்பட்டுள்ளது.

இந்த நேரத்தில் நான் மருத்துவர் ஆகுவதற்கு காரணமான என் பெற்றோர் திரு. கோ.வி. கலியபெருமாள் மற்றும் திருமதி. புனிதவதி அவர்களுக்கு இந்நூலை சமர்பிக்கின்றேன். மேலும் இந்த நூலை எழுத ஊக்கம் அளித்த எனது மரியாதைக்குரிய மாமனார் மருத்துவர் சு. நரேந்திரன் அவர்களுக்கு எனது நன்றியை உரித்தாக்குகிறேன். மேலும் எனது உயிர் சொந்தகளான திருமதி. விஜயலட்சுமி நரேந்திரன் மற்றும் ஜூனியர் சுந்தரேஷ்; அவர்களுக்கும்,; இந்த நூலை எழுத பக்கபலமாகவும், உறுதுணையாகவும் இருந்த என் மனைவி மருத்துவர் பத்மபிரியா மற்றும் மகன்கள் க.ப. கிஷன் ரிஷிவந்த் மற்றும் க.ப. ருஷில் தரன் ஆகியோருக்கும் என் அன்பை உரித்தாக்குகிறேன்.

மேலும் இந்த நூலை தட்டச்சு செய்த திருமதி. விஜயலட்சுமி அவர்களுக்கு நன்றியை உரித்தாக்குகிறேன். மேலும் என் துறையை சார்ந்த அனைவருக்கும், என் நன்றியை தெரிவித்துக் கொள்கிறேன்.

பேராசிரியர் டாக்டர் க. கார்திகேயன் எம்.டி.

முதண்மையர் (கல்வி) மணக்குள விநாயகர் மருத்துவக் கல்லூரி
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மதகடிப்பட்டு – புதுச்சேரி.

ஆசிரியர் குறிப்பு...,

பேராசியரியர் மருத்துவர். க. கார்த்திகேயன் தனது பட்டப் படிப்பை புதுவையிலுள்ள ஜிப்மர் மருத்துவமனையில் பயன்றார். மேலும் பட்டமேற்படிப்பை தோல் மருத்துவத்துறையில் அதே கல்லூரியில் பயின்றுள்ளார். பிறகு அவர் ஸ்ரீ மணக்குள விநாயகர் மருத்துவக்கல்லூரியில் இணைந்து தற்போது தோல் துறையில் தலைமை பேராசிரியராகவும் மற்றும் டீன் அகாடமிக் ஆகவும் பணியாற்றி வருகிறார். இவர் ஏறக்குறைய 200 ஆராய்ச்சிக் கட்டுரைகளை சர்வதேச மருத்துவ இதழ்களில் வெளியிட்டுள்ளார். மேலும் ஆராய்ச்சி புத்தகங்களையும் எழுதியிருக்கிறார். இவர் புதுவை தோல் மருத்துவச் சங்கத் தலைவராகவும் இருந்தார். மேலும் இவர் பல மருத்துவ மாநாடுகளிலும் பங்கேற்று சிறப்புரை ஆற்றியுள்ளார். இது மட்டுமல்லாது சர்தாரிலால் நினைவு சொற்பொழிவும் ஆற்றியுள்ளார். மேலும் ஆர்.கே. ஸ்கின் மற்றும் டென்டல் க்ளினிக் (R.K. Skin & Dental Clinic) இயக்குநராகவும் பணியாற்றி வருகிறார்.

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Effect of Climatic Changes in the Incidence and Emergence of Infectious Diseases

K Neelakantan Viswanathan

INTRODUCTION

Climatic changes influence largely the incidence, spread and emergence of infectious diseases, the majority of which are either waterborne or vector-borne. Heavy rainfall and floods, cyclones causing displacement of population, El Niño phenomenon, emission of greenhouse gases like carbon dioxide and increasing temperatures play an important role in emergence and spread of infections. The following article deals with these globally especially in USA and also incidences elsewhere worldwide.

WATERBORNE DISEASES

The planet's water cycle is influenced by the earth's atmospheric energy which is increasing of late, being dependent on heavy downpours and greenhouse gas emissions. All parts of the US except the southwestern regions and Hawaiian islands have witnessed heavy rainfalls since the beginning of 20th century. Alaska and New England have also witnessed great intensification of water cycle which has increased by about 3–5 times, in contrast to what was present previously. This is likely to affect the entire country in future. The resultant contamination of drinking water, groundwater, and surface water result in spread of infections like cholera and leptospirosis. Hepatitis A, *Escherichia coli* O157:H7 infection and cryptosporidiosis have resulted with discharge of chemical pollutants and heavy metals in contaminated sewer outflows which receive storm and sanitary waste water in the same pipe during incessant rainfalls. The proliferation of *Vibrio* resulting in cholera outbreaks have been attributed to the deceased sodium concentration in ocean waters and faster rate of warming in Eastern Mediterranean nations like Israel, Chile in South America, Northwestern Iberian Peninsula, Pacific Northwest in US, Baltic nation, and polar regions. In 2004, consuming oysters in Alaska led to outbreaks of *Vibrio parahemolyticus* infection, which was not even spoken or heard of previously. This still extended more toward the north by a great distance.

EL NIÑO–SOUTHERN OSCILLATION RELATED OUTBREAKS

The eastern pacific ocean undergoes warming of waters periodically once in 3 years and this is called El Niño–Southern Oscillation (ENSO). They have immense effects on the weather. La Niña is the opposite, referring to cooler than average temperatures. Greenhouse gases cause increase in ocean temperatures and the heat generated produces hurricanes of increased intensity causing more rainfall, but they occur with decreased frequency. A very powerful hurricane Mitch hit Central America, Honduras and Nicaragua, Yucatan peninsula, and south Florida with wind speed of nearly 275 km/h killing more than 10,000 and causing dengue, malaria, and leptospirosis. ENSO caused epidemics of infectious diseases in wet conditions suitable for insect vector breeding especially in East and South Africa from 1950. Outbreaks in East African countries like Tanzania, Kenya, and Somalia were envisioned about a month earlier. El Niño had capricious association with incidences of malaria in Africa. However, the most consistent was in South Africa and Swaziland. South America, especially Colombia witnessed a strong association with malaria where an increase of 20% occurred with a degree centigrade temperature increase in 2006. In Thailand, between 1996 and 2005, there was increased incidence of dengue fever and 15–20% of variation in incidence was due to El Niño. There was an increased incidence of dengue fever epidemics in South America during the El Niño phenomenon from 1997 to 2007. Rift Valley fever also is influenced by ENSO-driven rainfall especially in southern and eastern Africa.

Since insects are cold blooded, their cluster in a particular region is determined by the temperature of the surroundings. The insects are forced to move up the mountainsides and toward the poles during extremes of heat and the present breeding sites become malapropos. Stagnant pools of water during rainy season become favorable breeding sites for mosquitoes spreading dengue and malaria. In the [illegible] such breeding pools

into atmosphere. Major industrial nations by 2050, set a warming target less than 2 C above the preindustrial levels.

This requires reducing greenhouse gas emissions by 50–75% below 2010 levels (2016 Paris agreement on climatic change) and ensures better air quality and decrease indoor air pollution mortality. For example, biofuel burning cookstoves used by 3 billion people accounts for 25% of the black carbon emissions warming the planet and killing 4 million per year. Avoid them and use clean ones.

Adaptation is secondary prevention decreasing harm associated with sea level rise, heat waves, floods, aridity, and wildfires. Adaptation predicts the precise location, duration, and severity of extreme weather events and flooding due to sea-level rises. The climatic changes that are encountered since 1850 predominantly depend on the emission of greenhouse gases that absorb infrared radiation, like carbon dioxide, nitrous oxide, and methane that are formed as a result of deforestation and combustion of fossil fuel and halocarbons. They alter the climate of the earth and change the epidemiology of some infectious diseases, cause emergence of new ones and spread of existing ones.

In Holocene, the present period, the temperatures have been stable with just two and a half degrees Celsius variability. In the last 50 decades, the temperature has increased by about 5 C, whereas the same amount of increase will occur within the next one-and-a-half decades, unless the check on emission of greenhouse gases is made. Such is the impact of greenhouse gases on global warming. The temperature of the earth will be immensely less in the absence of greenhouse gases. The Arctic has overall warmed two times more with winters warming quicker than summers. The low temperatures at nighttime are nowadays rising faster than the high daytime temperatures and this has immense bearing on the incidences of vector-borne illnesses. The global temperatures are predicted to increase by the end of this century and extreme heat waves are very common these days contributing to forest fires, agricultural losses, and nutritional deficiencies causing infections.

The recent outbreaks of Nipah virus infections in Kerala and Kyasanur Forest disease may also be related to climatic changes.

CONCLUSION

In conclusion, climatic changes are linked to life cycle of infectious agents via ecological processes causing seasonal fluctuations. Controlling disease outbreaks successfully should be our motto by:

- Increasing surveillance
- Continuing research into associations between climatic changes and infectious diseases incidence
- Improving infrastructure of public health by health training and disease control programs
- Use of predictive models.

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also appear in dry seasons when residual pools of water are left behind by retrocoded rivers favorable for breeding of Anopheles mosquitoes. The biting rates of mosquitoes are higher in warmer temperatures which shorten the reproductive cycle of parasites. The areas which were previously too cold for their survival become favorable breeding sites in warmer climates. The Andes of South America in Colombia and Ecuador and East African rift mountains like Virunga, Mitumba, and Rwenzori range will very soon show increased malarial epidemics due to increasing temperatures and lesser immunity among the highlanders. The incidence of malaria is however not associated with rising temperatures in a linear fashion, optimal temperature for breeding, on an average, being 25°C. Higher temperatures also have detrimental effects on its gonadotrophic cycle. Anopheles mosquitoes increase as the availability of surface water pools for mosquito breeding increases and soil moisture determines the biting rates. Heavy rainfall can also flush the larvae from the sites of breeding. However, public health interventions decrease the incidence of malaria globally. West African nations may surpass the East African countries by the 22nd century in the incidence and transmission of malaria. Malaria will also be rampant in Europe, Asia, and America in the temperate regions.

Similar behavior of increasing temperatures transmitting dengue as a result of larval development of *Aedes* mosquitoes has been observed. A temperature below 15 or greater than 35°C decreases mosquito feeding. Dengue transmission also depends strongly on peak relative humidity. New Caledonian studies have shown a peak transmission at 32°C. *Aedes* mosquitoes rely more on domestic breeding sites than natural water pools and this accounts for the infrequent association between dengue epidemics and precipitation. Dengue epidemics sometimes have shown to be associated with piped water supply owing to domestic storage of water. Epidemics have also been linked to rainy seasons. Lymphatic filariasis, onchocerciasis, and trypanosomiasis are also waterborne.

The population exposed to *Aedes* aegypti may increase twofold by 2010 not only due to climatic changes but also due to population increase. Incidences of several other diseases caused by arboviruses like Zika, West Nile, eastern equine encephalitis, and chikungunya increase with changes in climate. The western hemisphere in Brazil showed an increased incidence of Zika virus disease in 2016, which initially occurred in French Polynesia in 2013. Chikungunya was seen in Italy in 2007, previously being confined to Africa, and is likely to gain niche in western Europe like France in 2050. The West Nile outbreaks in southern USA in Texas and Arizona is likely to spread north to New England and upper Midwest by 2050 and even further north to southern Canada by 2100 due to compatible climates. Tick-borne encephalitis had a strong climatic change association in Sweden in the late 1990s. Saint Louis encephalitis was similarly prevalent in Florida.

Due to increasing temperatures, Lyme disease, babesiosis, and anaplasmosis now in New England has established itself in Canada and is likely to spread even further as a result of the vector Ixodes scapularis. By 2100, the Gulf coast is likely to become less suitable for harboring the tick and Quebec, Arkansas, and Iowa may most likely be habitats for it by 2080. Climatic change also forces movement of population and such motivations are associated with epidemic diseases. An example was Hurricane Katrina which displaced millions of people from the US Gulf Coast and outbreaks of pneumonia, diarrheal disease, skin ailments occurred in refugees. They are difficult in detecting and management. Warming by 1°C increases the odds of a stronger storm by nearly fivefold. Hurricane Thane with Pondicherry as its epicenter in 2011 and Hurricane Fani of 2019 in Orissa also were responsible for several waterborne outbreaks. The survival of certain organisms increases at reduced temperatures and ultraviolet sunlight like hepatitis A viruses and Coxsackie B virus, the foodborne agents being shell fish and waterborne agents being groundwater. Outbreaks of infections with enteric protozoa like Cyclospora and cryptosporidium occur during stormy periods, their transport increasing from fecal and waste water sources. Temperature is associated with maturation and infects ivory of *Cyclospora*. Temperature-associated growth in marine environment with salinity increase transmission of *Vibrio vulnificus* and parahemolyticus along with *Anabaena* species and *Gymnodinium Pseydibutzschia* species, the foodborne agents being shellfish and waterborne agents being recreational and wound infections.

Deforestation and new habitation increase the incidence of Oropouche and cutaneous leishmaniasis along with malaria and Lyme disease. Red tide is a common name for algal blooms, which are large concentrations of aquatic microorganisms, such as protozoans and unicellular algae (e.g. dinoflagellates and diatoms). The upwelling of nutrients from the sea floor, often following massive storms, provides for the algae and triggers bloom events. Harmful algal blooms can occur worldwide and natural cycles can vary regionally. Elevated precipitation increases incidences of Hantavirus pulmonary syndrome and Rift Valley fever. Schistosomiasis, Onchocerciasis, and Venezuelan hemorrhagic fever are other illnesses. The intense earthquake off Sumatra coast and the deadly tsunami that resulted killing thousands of people in India, Sri Lanka, Thailand, parts of Malaysia, and even Somalia on December 24, 2004 caused several waterborne diseases in addition. Similar effects occurred with the Great Tōhoku earthquake tsunami in eastern Japan in 2011 causing nuclear accidents, primarily the level seven meltdowns at three reactors in the Fukushima Nuclear Power Plant complex and the associated evacuation zones affecting hundreds of thousands of residents. Greater disease burdens occurring with climatic changes are not only infections. Such changes cause poor access to safe drinking water and food and result in malnutrition. Events related to climate change were responsible for revolutions of Arab Spring and Syrian civil war. Mitigation refers to primary prevention involving decrease of greenhou

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INFECTIOUS DISEASES

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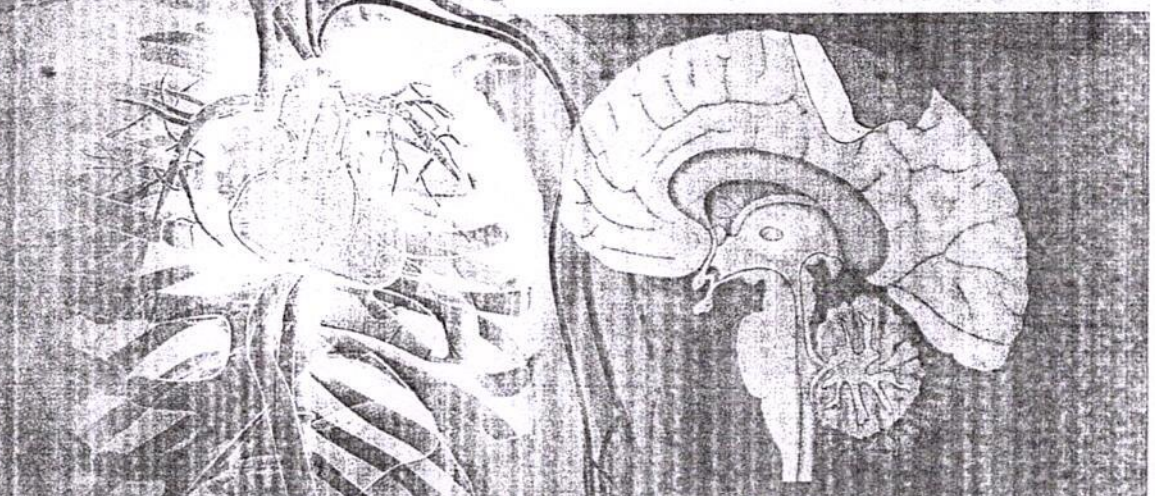

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three 3 months to complete 1 year. Survivors with ocular findings require follow-up to assess for cataracts. Semen testing should be done at follow-up visits until negative for Ebola virus RNA. If semen testing is unavailable, then WHO recommends that men practice safe sex for 12 months from onset of illness.

If patients develop fever, then they should be assessed for relapse, while also being evaluated for other causes of infection. Development of uveitis and meningitis may suggest relapse. Spinal fluid analysis should be done when meningitis is suspected, even if the blood tests are negative for Ebola virus RNA.

Prevention

There is no FDA-approved vaccine available for Ebola, although several vaccines are in various stages of development, and some have shown efficacy against virus challenge in laboratory primates. A vesicular stomatitis virus-based vaccine expressing a surface glycoprotein of *Zaire Ebolavirus* (rVSV-ZEBOV) is a promising candidate that was rapidly escalated into efficacy trials in Africa. In August 2015, the *Lancet* published an interim analysis showing that rVSV-ZEBOV appears to provide 100% protection against the virus. The trial was carried out in Guinea and used a "ring" design in which contacts of infected people are vaccinated, as are any subsequent contacts of those people.

Recommendations for travelers to an area affected by an Ebola outbreak or those residing in such an area are as follows:

- Practice careful hand hygiene and avoid contact with an infected person's blood or body fluids, including personal items that may have come in contact with blood and body fluids.
- Avoid unprotected contact with the body of a deceased person who was infected with EVD.
- Avoid contact with bats and nonhuman primates, including blood, bodily fluids, and tissues from these animals.
- Monitor health for 21 days after return from an Ebola endemic region, and seek medical care immediately if any symptoms develop.

Health care workers at risk for exposure to Ebola must wear PPE and notify appropriate health officials at their institutions if they have unprotected contact with the blood or bodily fluids of a person infected with EVD. Finally institutions must have proper infection control and sterilization measures in place for handling of biohazardous materials. Clinicians may contact the CDC for additional information on use of experimental therapeutics and vaccines for prophylaxis following a high-risk occupational exposure to Ebola virus.

Monitoring

Local authorities may have specific regulations for management of asymptomatic individuals with Ebola virus exposure. This includes self-monitoring versus direct observation by a health official, and the need for quarantine. In general, asymptomatic persons who have had an exposure should be monitored for 21 days after the last known exposure, and should immediately report the development of fever or other clinical manifestations suggestive of EVD to the health authorities.

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FOODBORNE ILLNESSES

Method of

Anita Devi K. Ravindran, MD; and K.N. Viswanathan, MD

CURRENT DIAGNOSIS

- Infective foodborne illnesses are innumerable and are caused by various microorganisms. Some microorganisms are established agents, several others are emerging pathogens, and the pathogenicity of the remainder is still under speculation.
- Classification of these illnesses is best done according to their incubation periods, the symptoms they produce, or both.
- Nausea and vomiting predominate in illnesses with short incubation periods caused by preformed toxins, whereas diarrhea predominates in those with long incubation periods caused by toxins produced in the intestine.
- Undercooked charcuterie, meat, poultry, and seafood account for a majority of foodborne illness, but dairy products, salads, pastries, fruits, and vegetables can also cause illness.
- Contaminated water acts as a vehicle in almost all instances.

CURRENT THERAPY

- The majority of infective foodborne illnesses with symptoms confined to the gastrointestinal tract, although apparently alarming, are self-limiting and need only supportive measures including replacement of water and electrolytes.
- Antimicrobial agents are indicated only in certain patients, including those with systemic illnesses, extremes of age, immunocompromised and malnourished states, and severe life-threatening illness.
- Antitoxin is useful in botulism poisoning.
- Vaccines are available against *Vibrio cholerae*, *Salmonella typhi*, hepatitis A virus, and rotavirus, but their effectiveness and cost-effectiveness are debatable.

The Centers for Disease Control and Prevention (CDC) estimates that each year roughly one in six Americans (about 48 million people) gets sick from foodborne illnesses; 128,000 are hospitalized, and 3000 die. These figures are higher in developing nations, and many cases are not brought to light because they occur in remote villages. The 2011 estimates provide the most accurate picture of infective foodborne illnesses, of which bacteria, viruses, and parasites account for the majority. Processing of ready-to-eat foods increases the risk of acquiring foodborne illness because of increased food handling, leading to introduction and growth of pathogens. Increased international travel and migration have also resulted in a greater risk because travelers are at high risk for developing foodborne gastroenteritis caused by pathogens to which they have not been exposed at home.

Classification of Foodborne Illnesses

Agents causing foodborne diseases may be classified in several ways. The most common scheme is a taxonomic combined with a classification based on mode of action (Tables 1 to 3).

Bacteria

Aeromonas Species

Species of *Aeromonas* are ubiquitous and autochthonous in aquatic environments, more so after the tsunami that followed the Indonesian earthquake in December 2004. These aeromonads share many biochemical characteristics with members of the Enterobacteriaceae. The mesophilic species *Aeromonas caviae*, *Aeromonas hydrophila*, and *Aeromonas veronii* are principally associated with gastroenteritis; *A. caviae* particularly infects children younger than 3 years.

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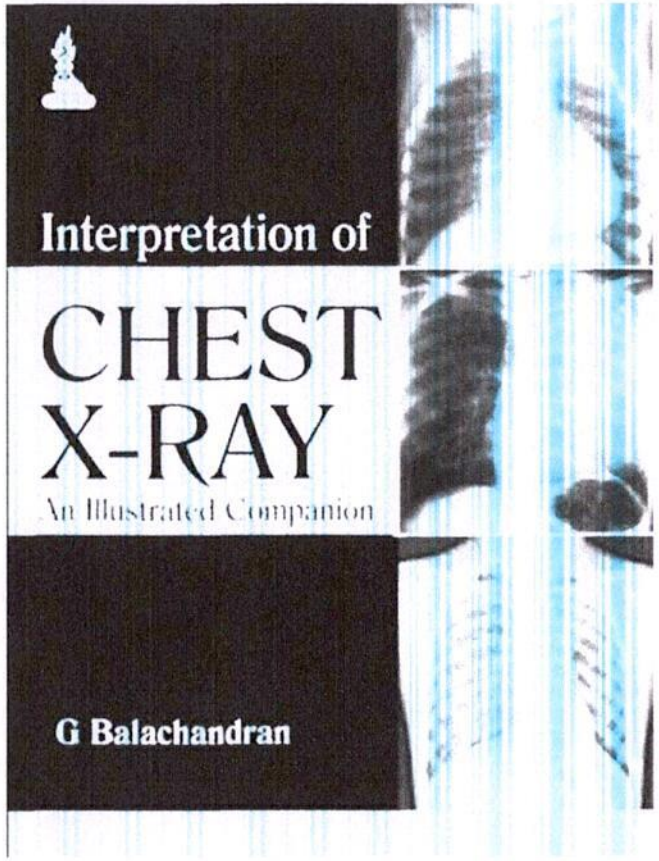

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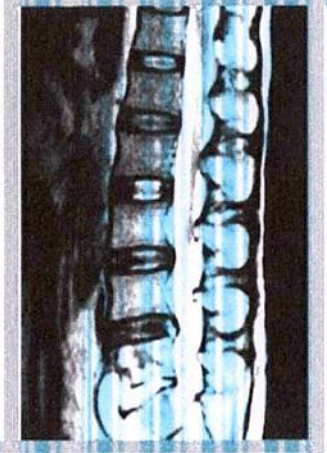

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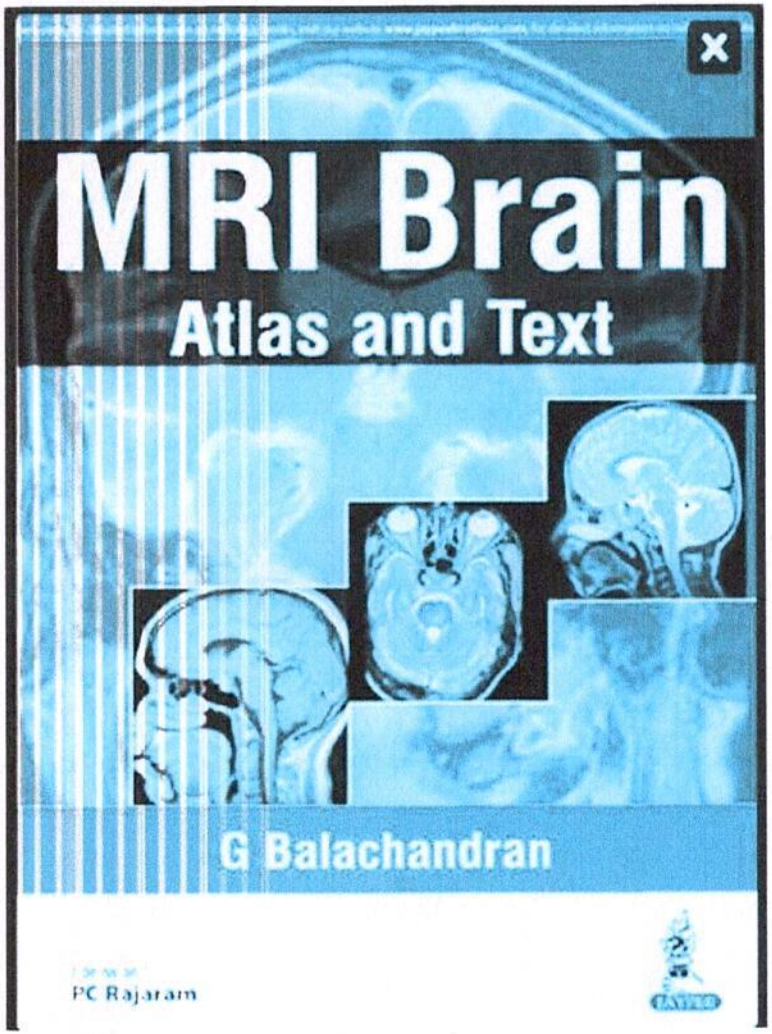

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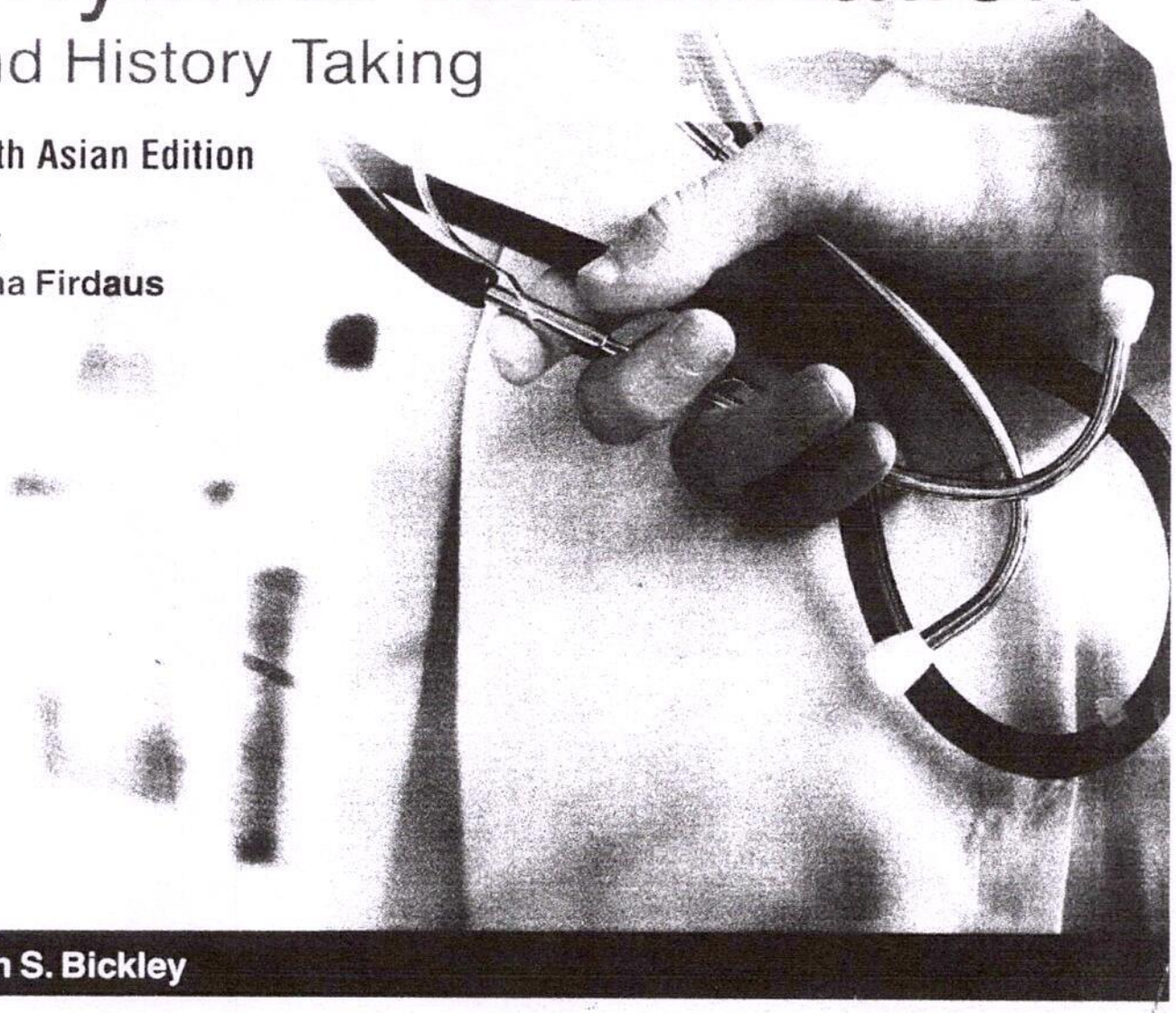

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