

# **PRIORITY AREA 2:**

## **COMMUNICABLE/INFECTIOUS**

### **DISEASES**

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## **Bhutanese Refugees: A Threat to Nepalese regarding HBV Infection (1998)**

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### **Background**

The carrier rate of Hepatitis B surface antigen is 6% in Bhutan and 1% in Nepal as per World Health Organization 1997 report. Since outbreaks of viral hepatitis are also known, its high prevalence in a migrated community if any may be a potential threat to the rest of the local people. So this study was carried out on Bhutanese refugees living in refugee camps located in Eastern region of Nepal to find out the prevalence of Hepatitis B surface antigen carrier rate among them.

### **Methods**

This prospective sero-epidemiological study was carried out in Beldangl II camp. With the help of semi-structured questionnaire, 500 volunteers enrolled, were interviewed for the risk factors for Hepatitis B virus transmission. Blood samples of 467 samples were tested for Hepatitis B surface antigen by immunoassay based on immunochromatographic sandwich principle.

### **Results**

Out of 467 samples, 4 were positive for Hepatitis B surface antigen, an incidence of 0.85%.

### **Conclusions**

Hepatitis B surface antigen carrier rate was found to be low in Bhutanese refugees. It was also found that they were not engaged in any practice that could increase the chances of Hepatitis B virus transmission. Thus, this study shows that, the refugees are not a threat to the local people as far as Hepatitis B virus transmission is concerned.

**Keywords:** Bhutanese refugees; carrier rate; hepatitis B surface antigen (HBsAg); hepatitis B virus (HBV).

## **Prevalence of Nosocomial Infection in TUTH (2000)**

Lamichanne DR, Shrestha P

### **Background**

Nosocomial infection is the infection acquired by patient, patient party or hospital staff from hospital. Generally infection occurring after 48 hours of hospital stay is said to be hospital acquired.

### **Methods**

A cross-section observational study was done. In this study, ten different wards of Tribhuvan University Teaching Hospital were observed. Total of 171 patients were observed.

### **Results**

Out of 171 patients, 4 were found to have Nosocomial infection. The point prevalence of such infections in the hospital was calculated to be 2.35%.

### **Conclusions**

The commonest form of Nosocomial infection was infection of surgical wound.

**Keywords:** Nosocomial infection; point prevalence; prevalence; surgical wound.

## **The Impact of Psoriasis in the Psychosocial Well Being of Chronic Psoriatic Patients and their Family Members: A Community Based Study (2001)**

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<sup>1</sup>Institute of Medicine, Kathmandu, Nepal.

### **Background**

Psoriasis is a common and chronic dermatopathy with significant impact in the physical activities and the psychosocial well being of the patients.

### **Methods**

The patients for the interview were selected from psoriatic patients with severe disease of at least 5 years duration, from those attending the Tribhuvan University Teaching Hospital and B & B Hospital and those diagnosed of having psoriasis in the community interactive programme conducted during the study. Along with the patients some family members were also identified. Altogether 21 patients and 9 family members were interviewed.

### **Results**

Most patients and family members are convinced that it is not a contagious disease. Community members had mistaken it for leprosy and think that it is contagious. Patients tend to hide the disease and they worry that it will come in visible places and other members of community will see it. Spouse, family members and friends are in general supportive. Community members discriminate against the patients which is the main reason of fear and sadness in patients. Itching and scaling give problem to some extent. The patients were very sad and worried because the disease doesn't get cured, it

may be related to some other serious disease and it may be transmitted to children.

## **Conclusions**

Social stigmatization is the main problem due to psoriasis and this in turn is responsible for sadness, fear and worry in the patient's life.

**Keywords:** discrimination; impact; psoriasis; psychosocial well being.

## **Rapid Non-Invasive Diagnosis of Kala-azar (2001)**

Gyawali K, Thapa S, Devkota B, Yadav CS

### **Background**

Kala-azar is endemic throughout central and eastern terai region of Nepal bordering the Indian state of Bihar. Lack of knowledge, unavailable simple and reliable diagnostic test and poverty-all contribute to late diagnosis and institution of an effective chemotherapy; thereby maintaining the potential human reservoir at high level in the community. Since invasive diagnostic method is an unacceptable test of choice in the endemic region, an alternative technique is a dire necessity. The present study evaluated recombinant K-39 Leishmania test with splenic aspirate in hospitalized Kala-azar patients.

### **Methods**

This was a retrospective review of hospital case record of Kala-azar patients admitted during the months of Poush- Chaitra 2057. All hospital case notes of the 4 months with the diagnosis of Kala-azar were screened. Shukraraj Tropical and Infectious Disease Hospital, Teku was taken as the study area.

### **Results**

The rK-39 Leishmania dipstick achieved a high sensitivity (96%) and high positive value (95%). The dipstick is a simple, reliable and a robust technique.

### **Conclusions**

The rK-39 Leishmania dipstick is an acceptable test of choice in the diagnosis of Kala-azar and may be of great utility especially in the endemic districts where invasive methods are neither applicable nor appropriate.

**Keywords:** endemic; Kala-azar; positive predictive value; rK-39 Leishmania dipstick; sensitivity.

### **A Report Surveillance of Multiple Drug Resistant (MDR) Bacterial Infections among the Patients Attending to Different Out-patient Department (OPD) and Hospitalized Patients in TU Teaching Hospital (2001)**

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#### **Background**

Multi Drug Resistant bacterial isolates have been frequently reported from different parts of the world as an emergence of treatment problem. Such Multi Drug Resistant bacterial strains have also been increasingly isolated from the clinical specimens of the hospitalized patients as well as the patients attending to out-patient services of TU Teaching Hospital. To know the exact situation of different types of Multi Drug Resistant strains, this surveillance study was carried out.

#### **Methods**

A total of 6955 clinical specimens during six months period beginning from July 12, 2000 to January 12, 2001 were investigated in Tribhuvan University Teaching Hospital. The antimicrobial drug resistance testing of the isolates to

the various antibiotic disks was carried out according to standardized disk diffusion method recommended by NCCLS.

## **Results**

Of the total isolates 634 during six months period from clinical specimens 2505 of the hospitalized patients, 271 Multi Drug Resistant strains (42.74%) were found; the most predominant were *Esch.coli* 88, *Pseudomonas aeruginosa* 62, *Klebseilla sp.* 58 and *Staph. aureus* 30. Among the patients attending to out-patient department services, 254 Multi Drug Resistant strains (17.82%) were found from 1425 isolates of the total specimens 4450 in the study period; the most predominant were *Esh.coli* 99 followed by *Klebseilla sp.* 50, *Staphylococci aureus* 44 and *Pseudomonas aeruginosa* 38.

## **Conclusions**

Understanding the genetics of resistance, the practitioners and other categories of health provider need to understand the dosage and timing in the treatment of particular infections. Before use of antibiotics one should know which is specified for a particular bacterial infection.

**Keywords:** antibiotic; bacteria; infection; misuse; multi drug resistant; overuse; resistant.

### **A Study on Correlation between Hepatitis B Surface Antigen and Liver Function Test and the Possible Factors Responsible for Hepatitis B among the Patients Attending Tribhuvan University Teaching Hospital (2001)**

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<sup>1</sup>Nepal Health Research Council, Ramshah Path, Kathmandu, Nepal.

## **Background**

Hepatitis B is one of the major diseases of human and is a serious global public health problem. Although Nepal is low endemic for Hepatitis B it is responsible for significant cause of morbidity and mortality.

## **Methods**

The study was conducted among the patients attending Tribhuvan University Teaching Hospital. Total 78 Hepatitis B surface antigen reactive sera and

patients along with 54 liver function elevated (both icteric and non icteric) were studied to explore the facts.

### **Results**

It was found that 20% of Hepatitis B surface antigen reactive cases correlated with the liver function test indicating Hepatitis B virus a major threat of jaundice in or part. Amazingly of the total reactive case 14 % were found to have decreased albumin concentration a state of clinical emergency. Tracing the possible source of infection heterosexual activity was found most common (23%) but shockingly 6.4% of the patients were suspected to be transmitted from unhygienic surgical procedure during vasectomy and only few (8%) were found to have knowledge regarding Hepatitis B virus transmission and vaccination.

### **Conclusions**

Sterilization at any level of surgical practice and educational program is recommended to eventually stop the virus from transmission.

**Keywords:** Hepatitis B virus; Hepatitis B surface antigen; infection; knowledge; liver function test; transmission.

## **A Study on the Awareness Regarding Pulmonary Tuberculosis Among Carpet Workers of Productive Age Group (15-49 years) in Lalitpur district (2001)**

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### **Background**

The carpet industry is the highest industrial employment generator in Nepal and has become particularly beneficial to the mass work force that is illiterate or hardly had any education background. The risk of Tuberculosis

infection is more in carpet factories because of overcrowding, poor environment, lack of working space, ignorance of health care.

### **Methods**

A descriptive study was conducted from 2<sup>nd</sup> Baisakh to 4<sup>th</sup> Jestha 2058. Data was collected from 100 respondents in 8 different carpet factories using simple random sampling procedure. Questionnaire was used to collect information from the respondents.

### **Results**

More than half of the respondents (60%) had high level of awareness. 75.35% respondents had knowledge about transmission, only 13.40% had knowledge about cause, more than 60% had knowledge about signs and symptoms and 40.21% had knowledge about vaccination against pulmonary tuberculosis. 72.16% respondent knew about the treatment but only 45.71% had knowledge about correct duration of medicine. 85.57% respondents knew the treatment available place. Only 28.57% respondents had no knowledge about preventive measures of pulmonary tuberculosis. 82.47% respondents showed good attitude towards the patients of pulmonary tuberculosis.

### **Conclusions**

Only a small number of respondents had high level of awareness and access to wide range of different sources of information that helps to obtain knowledge on pulmonary tuberculosis.

**Keywords:** attitude; awareness; carpet factory; knowledge; pulmonary tuberculosis.

## **Awareness of Hepatitis B among Government High School Students of Dharan Before and After Educational Intervention (2001)**

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## **Background**

Hepatitis B virus, a silent killer is the major cause of morbidity and mortality. Children are 230 times more likely to develop these. Awareness on transmission of Hepatitis B virus is needed to protect our future generations from this infection.

## **Methods**

A quasi-experimental study design was conducted among government high school students of Dharan. Three government schools were selected using lottery method. Equal number of students (45) from each class was selected by simple random sampling technique and interviewed by using semi-structured questionnaire. Data were analyzed in frequency and percentage by using Two Population Proportion Test.

## **Results**

There was significant increase ( $p < 0.005$ ) in the level of awareness of students in Post interventional test. A significant number of students 71.1% ( $p < 0.005$ ) came to know about all types of Hepatitis virus after the intervention.

## **Conclusions**

There was significant increase in the level of awareness of Hepatitis B among government high school students of Dharan after the educational intervention. Educational intervention was found to be effective.

**Keywords:** awareness; educational intervention; government school; hepatitis B; post test; pre-test.

## **Epidemiological Study of Microfilariasis in Three Different Geographical Regions of Nepal (2001)**

Manandhar R

## **Background**

Bancroftian filariasis is spreading as an endemic in many parts of Nepal and is a major public health problem. This paper deals with the prevalence of microfilaraemia and filarial disease studying their association with individual characteristics and variables related to exposure to the vectors.

## **Methods**

The survey was conducted in Bhaktapur, Palpa and Bhairahawa covering three different geographical regions between January 2001-November 2001. Microfilaria was examined by multiple diagnostic techniques using blood collected between 20.00-01.00 as well as ICT card method. The male/female aged between 20 and 65 years were interviewed with questionnaire.

## **Results**

The risk of being microfilaria was greater among those who had lived in the study area for more than 15 years. The disease prevalence was 0.31%. The chronic clinical manifestation was found in both male and female and was increased with age. The cases of hydrocele in male were noticed more in terai and inner terai but microfilaraemic cases detected in hill. The survey showed that smear from buffy coat of night blood was the best to find microfilaria. ICT card method was found very satisfactory for diagnosis of antigenemia in *Wuchereria bancrofti* infection.

## **Conclusions**

Detection of parasite from microfilaraemia cases was found low compared with the laboratory diagnosis of antigenemia in *Wuchereria bancrofti* infection. In Bhaktapur district many cases of leg encephalitis were observed. Hydrocele cases were found more in terai and inner terai area but microfilaria was not detected from the urine specimens.

**Keywords:** filariasis; hydrocele; microfilaraemia; prevalence.

# **Prevalence of Hepatitis B e Antigen Positive Cases among Hepatitis B Virus Infected Patients (2002)**

Mishra AK

## **Background**

Hepatitis B is one of the most common viral infections affecting mankind. It is a major public health problem occurring endemically in all parts of the world. Nepal is a country with mixed prevalence of Hepatitis B virus infection. Prevalence of Hepatitis B in general population is low (Hepatitis B Surface Antigen 1% anti Hepatitis B Surface Antigen 8%) but moderate to high incidence of infection is observed in certain ethnic groups.

## **Methods**

A cross-sectional prospective study was carried out among 100 consecutive patients in the Liver unit at Bir Hospital from 1<sup>st</sup> Baisakh 2059 to 31<sup>st</sup> Jestha 2059. The presence of Hepatitis B e Antigen was done by Enzyme Linked Immunoabsorbant Assay (ELISA) method.

## **Results**

Among 97 patients, 19 patients were found to be positive for Hepatitis B e Antigen indicating the percentage of positivity to be 19.6%. The Hepatitis B Surface Antigen and Hepatitis B e Antigen were both found to be most prevalent in the age group of 20-29.

## **Conclusions**

The Hepatitis B Surface Antigen and Hepatitis B e Antigen were both found to be prevalent in the most productive age group. So if they become carrier there is high chance that they would transmit the disease to their respective wives and hence to the newborn babies.

**Keywords:** Hepatitis B; Hepatitis B e antigen; Hepatitis B surface antigen; incidence; infection; prevalence.

## **A Study on Socio-economic Determinants and Economic Burden of Japanese Encephalitis in Kailali district of Nepal (2002)**

Adhikari SR, Sharma BP

### **Background**

Japanese encephalitis is emerging as a serious public health problem in Nepal. The diagnosis and treatment of the JE patient has financial consequences to the society.

### **Methods**

The study was based on primary as well as secondary sources. However, the study relied mainly on primary data. For primary data, 60 households with Japanese encephalitis patients, 30 male and 30 female, were randomly selected from the list of Japanese encephalitis patients from the hospital records. Pre-designed, pre-tested questionnaires were administered, to collect quantitative information from the sampled household. Focus group discussion with health personnel, Japanese encephalitis patients, caretakers and key informants were also conducted to obtain in-depth information. Simple statistical tools such as averages, standard deviations, correlations between variables to explain the nature of relationship and test of significance have been used. Disability Adjusted Life Years calculation has been made using the formula outlined by Murray.

### **Results**

The direct cost which was the out of pocket cost of Japanese encephalitis treatment involved medical cost, transportation cost, and food expenses. The average total direct cost was Rs. 5281 per patient. A positive relationship ( $r = 0.24$ ) between food expenses and per capita income was observed. The average total time loss of the household (both patients and caretakers) was 90 person days. The average total resource cost was Rs. 10613 which was almost 15 percent of the average annual income. Of the total Japanese encephalitis household, 88 percent had borrowed loans for Japanese encephalitis treatment and the maximum amount borrowed was Rs. 9000. The total Disability Adjusted Life Years lost was 493.92. The study estimated

a Disability Adjusted Life Years of 365.70 reduced as a result of treatment provided by local health system. The study while analyzing the determinants of Japanese encephalitis identified several risk factors as environmental factors, occupational factors, level of income (poverty) factors, knowledge and behavioral factors and cultural factors.

### **Conclusions**

Japanese encephalitis is a rural based disease and a disease of the poor. It imposes multidimensional impact such as economic burden on the household, burden on the local health system, burden on society and increase in the marginal poor. Japanese encephalitis had an impact not only on the income but on the sources of income as well which effected their future income flow and prospects of a better future.

**Keywords:** determinants; disability adjusted life years; economic burden; Japanese encephalitis; risk factors.

## **Study on Practices/Knowledge and Receptions of Traditional Healers for Treatment of Jaundice in Kathmandu Valley (2003)**

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### **Background**

Traditional healers in Kathmandu Valley treat a wide variety of conditions. They are especially renowned for their ability to cure jaundice and other common ailments. Most resident of Kathmandu, even those who do not usually seek Ayurvedic treatment, will consult a traditional healers when, during the course an illness, they or family members become jaundiced. Approximately one third of the visits to the traditional healers in the city are for jaundice. This research was designed to find the applicable and practically successful knowledge of local healers for treatment of particular disease- jaundice.

### **Methods**

Twenty traditional healers renowned in Kathmandu, Lalitpur and Bhaktapur districts were selected. Questionnaires and interview were used as data collection tools.

### **Results**

Majority of traditional healers hesitate to talk over the knowledge of healing with other people and never transfer their knowledge to other except within their own family member. The research found four different methods (process means the mechanism how the used herbs work to cure jaundice used by the traditional healers) of treatment of jaundice by the healers. They were a) Oral application of drugs- results vomiting b) Oral application of

drugs- results diarrhea c)Using drugs (in the form of paste) at naval periphery d)Using through the nasal passage (drug in liquid state)- results nasal discharge e)Sweating f) Stimulate and liver.

### **Conclusions**

There is an urgent need to document the knowledge and forward scientific intervention for further research.

**Keywords:** jaundice; knowledge; methods; traditional healer; traditional knowledge; treatment.

## **Socio-Economic Impact of DOTS Strategy on Tuberculosis Control (A Case Study of Bhaktapur District) 2003**

Subedi LP, Khanal A, Sharma B, Subedi IP, Rana P, Raut RK

### **Background**

The Directly Observed Treatment Short Course (DOTS) has considerable impacts on patients of tuberculosis in terms of knowledge, attitude and socio-economic condition. The study aimed to know the socio-economic impact of DOTS on tuberculosis patients.

### **Methods**

The study was conducted from September 2002-March 2003 at Bhaktapur district. In the study, 305 registered in 19 DOTS centers and sub-centers of Bhaktapur district from July 2002-February 2003 was set as universe. Among these 120 patients from nine different DOTS centers and sub-centers were considered for the study. A purposive sampling method was employed for the selection of respondents. Semi-structured interview, group discussion and key informant interview were performed to collect the primary information.

### **Results**

The most economically active (15-59 years) adults are under the high risk of tuberculosis. Expenditure for investigation, travel and nutritious diet was higher among the patients. The illness increased the expenditure (for

medical treatment, transport and food) and loss of productivity which reduced the income. Loss of workdays was highest among the wage labours. The cost incurred seeking diagnosis in private hospitals is higher than that in government hospitals. However, DOTS decreased the period of work loss due to its strong follow up and regular drug consumption provision which ultimately helped the patients to recover their income.

### **Conclusions**

DOTS is available and accessible to all level of people and plays a significant role in reducing social stigma attached to the disease by caring the patient through regular supervision and observation.

**Keywords:** directly observed treatment short course; impact; provision; socio-economic; strategy; tuberculosis.

## **Prevalence of Hepatitis-B among Clinically Suspected Patients Visiting Ayurveda Hospital, Nardevi (2003)**

Gyawali P<sup>1</sup>

<sup>1</sup>Tribhuvan University, Institute of Medicine, Ayurveda College, Kirtipur, Kathmandu, Nepal.

### **Background**

Hepatitis B is a major public health problem in Nepal. Though a fatal disease having more hazardous result and consequences has been ignored and neglected compared to other diseases due to improper awareness policies and most important of all being inadequate research techniques and expensive equipments.

### **Methods**

This was cross-sectional study carried out in Kaya Chikitsa (General Medicine) Out-patient department of Ayurveda hospital, Nardevi from 1<sup>st</sup> July to 15<sup>th</sup> December 2003. 200 patients suffering from jaundice were selected using simple random sampling technique. Questionnaire was used to collect information from the respondents.

### **Results**

Among 200 patients, 8% were found positive for Hepatitis B. The result showed that 6.5% male and 1.5% female were positive for Hepatitis B. The age group 20-30 years is mostly found to be infected with Hepatitis B.

### **Conclusions**

Children are relatively safe if their parents were not infected with Hepatitis B. Various percent prevalence of the infection was encountered from 20 to 30 years of age which is the most productive age group.

**Keywords:** clinically suspected patients; Hepatitis B; infection; prevalence.

## **Socio-Behavioral Epidemiology and Ecological Determinants of Malaria Outbreak in Kanchanpur District (2003)**

Chand KB, Mahat BB, Joshi YP, Joshi HR

### **Background**

Malaria is a disease which has direct impact on productivity of people due to work loss, reducing work capacity and increasing work burden. In such condition, in developing countries there appears a vicious cycle of poverty. This study aims to find out the socio-behavioral epidemiology and ecological determinants of malaria outbreak in Kanchanpur district.

### **Methods**

The study was conducted in malaria outbreak wards of Jhalari and Krishnapur VDC of the study area during April 2003 to November 2003. Out of 2150 households of the study area, 215 households were selected using constructed random numbers. Information was collected through structured questionnaire. The blood samples were collected from the symptomatic suspects of malaria and examined. A total of four focused group discussions were conducted in each respective ward in order to get the deeper

understanding on the subject of the study. The search and review of the slide positive malaria cases were done from the record of Epidemiology and Disease Control Division, District Public Health Office, Vector Borne Disease Research and Training Center, health posts, sub-health posts and hospital to establish prevalence of malaria in selected wards.

## **Results**

The prevalence of slide positive malaria was found to be 26.09%. The reported prevalence was 26.09% and 20.37% among male and females respectively. The study also revealed that out of 215 respondents, 92.25% were engaged in agriculture. Regarding the treatment pattern of malaria, 81.94% were found to be treating at government health institutions. Households with bed net were 91.5%. Out of 207 animals shed, 53.14% were built at less than the distance of 20 feet. Out of 215 respondents in average, 60.92 had unsatisfactory peri-domiciliary environment.

## **Conclusions**

There is not any clear factor which caused malaria outbreak in the communities which means there are multiple factors responsible in the occurrence of malaria.

**Keywords:** determinants; epidemiology; malaria; outbreak; prevalence; socio-behavioral.

## **Molecular Epidemiology of Malaria in Nepal (2003)**

Parajuli K<sup>1</sup>, Khatri Y<sup>1</sup>

<sup>1</sup>Central Department of Microbiology, University Campus, Tribhuvan University, Kirtipur, Kathmandu, Nepal.

## **Background**

The distribution and the molecular finger print of the existing strain of the malaria and the indigenous inherent species was not yet disclosed. In this regard, molecular epidemiology of malaria in the context of Nepal is an essential area to be studied.

## **Methods**

The study was carried out in Kanchanpur district from July 2003 to December 2003. A total of 676 blood samples were collected from individual malaria

suspected patients attending malaria clinic, District Public Health Office and different sets of camps. Giemsa stained thin and thick blood smears were examined microscopically and compared with the Rapid Diagnostic Test which was finally followed by Polymerase Chain Reaction. The observations thus obtained were documented/analyzed and comparative study was performed.

## **Results**

Among the total, 374 patients attended in malaria clinic the positive cases for malaria were 80 in which 10 cases were of *Plasmodium falcifarum* and 70 cases were of *Plasmodium vivax*. The total of 302 patients attended in the camp where the positive cases for malaria were 68 in which 27 cases were of *Plasmodium falcifarum* and 41 cases were of *Plasmodium vivax*. The sensitivity, specificity, positive predictive value and negative predictive value of the optiMAL test for diagnosis of *P. vivax* was found to be 84.61%, 100%, 100% and 77.78% respectively. Similarly, the sensitivity, specificity, positive predictive value and negative predictive value of the optiMAL test for diagnosis of *P. falcifarum* was found to be 85.71%, 100%, 100% and 92.85% respectively.

## **Conclusions**

Extensive study of malaria as molecular epidemiology should be conducted for the determination of low parasitaemia and multiple infections.

**Keywords:** epidemiology; malaria; negative predictive value; optimal test; positive predictive value; rapid diagnostic test; sensitivity; specificity.

### **Study on Association of *Helicobacter Pylori* Infectious with Acid Peptic Disease (APD) among Nepalese (2003)**

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## **Background**

Infection with *H.Pylori* is widespread. In developing countries, 8 in 10 children by the age of 5 years and more than 90.0% of adults are infected. In Nepal, prevalence of *H.Pylori* in various gastro duodenal diseases has been reported

to be ranged from 39.0% to 86.6%. Present study was carried out to investigate the prevalence of *H.Pylori* associated Acid Peptic Disease in patients of different sex, age and ethnic.

### **Methods**

This study was carried out in Kathmandu valley but with inclusion of all patients with complain of Acid peptic disease both from inside and outside valley and undergoing endoscopic examination. A total of 203 subjects were included.

### **Results**

One fifth of total patients included had severe stage of Acid peptic disease. The Helico urease test positive rate increased significantly with the increase of severity of Acid peptic disease. Present findings indicated that *H.Pylori* is associated with over 75.0% of severe cases of Acid peptic disease.

### **Conclusions**

One third of patients with Acid peptic disease problems are infected with *H.Pylori* and needs specific treatment for the same. Public health education, early detection of cases and specific treatment should be encouraged.

**Keywords:** acid peptic disease; helicobacter pylori; helico urease test positive rate; incidence; infection.

## **Research Report on Use of Polymerase Chain Reaction (PCR) for the diagnosis of Malaria in Nepal (2003)**

Ghimire P<sup>1</sup>

<sup>1</sup>Central Department of Microbiology, Tribhuwan University, Kathmandu, Nepal.

### **Background**

Polymerase chain reaction method has been found to be more sensitive for *Plamodium vivax* (91%) and *Plasmodium falcifarum* (89%). Level of parasite detection has been reported to be as low as 1 to 10 parasites per micro litre

of blood in patient sample. Diagnosis by polymerase chain reaction has also been reported to be species specific for all four species of human Plasmodium. Hence there is a need to evaluate a non-microscopic diagnostic technique which should be sensitive, specific and may be available in central facilities of the country for evaluation of drug efficacy, drug resistance to study genetic diversity of parasite found in Nepal.

### **Methods**

During the study period (January-September 2003) blood samples from 283 suspected malaria patients from Dhanusha and Kanchanpur districts located in central and far western Nepal were collected and further analyzed utilizing conventional Giemsa stained malaria microscopy and Polymerase Chain Reaction based on 18sssr DNA gene.

### **Results**

Out of total 283 samples only 66 (23.32%) samples were positive for malarial parasite (*Plasmodium falcifarum*-26, *Plasmodium vivax*-40). The prevalence of malaria in Kanchanpur district during the outbreak season 2003 was 23.32%. *Plasmodium falcifarum* malaria cases were 9.18% and *Plasmodium vivax* malaria cases were 14.13% of the total collected cases whereas 39.39% and 60.60% of the total positive cases respectively. This rate of prevalence is much higher than the expected national prevalence rate. Comparative evaluation of polymerase chain reaction and Giemsa stained blood smear microscopy method showed that polymerase chain reaction is almost as sensitive as microscopy. Polymerase chain reaction could detect 2 cases of falcifarum malaria which could not be detected by microscopy.

### **Conclusions**

Polymerase chain reaction is a useful diagnostic technique for malaria diagnostic research especially in drug resistant and low parasitaemic cases.

**Keywords:** malaria; microscopy; plasmodium falcifarum; plasmodium vivax; polymerase chain reaction.

## **Compliance of Tuberculosis Patients with Treatment Banke, Bardiya & Surkhet Districts (2004)**

Pokhrel GS, Kandel SL

### **Background**

Patient non compliance with treatment is the main problem in TB control programme. DOTS strategy to treat TB patients has focused on non compliance problem but need to do study on it to solve the existing problem.

The objective of this study is to determine the compliance of tuberculosis patients with treatment and identify main factors affecting compliance of tuberculosis patients with treatment.

### **Methods**

In this cross-sectional study, districts were selected purposively and DOTS treatment centers were randomly selected in Banke, Bardiya and Surkhet districts. All patients who completed one month or more treatment and came to health facility for drug (n=380) were interviewed using a structured and semi-structured questionnaire. Collected data were processed and analyzed on computer.

### **Results**

Out of total respondents, 63.3% were economically productive with male and female ratio of 2:1. About 69% of the respondents were farmer. In employment status, labour group had statistically significant lower compliance (p value=0.004). Similarly low income status group and Terai ethnic group had also lower compliance with p value=0.035 and 0.00073 respectively. Patient non compliance was higher in large family and statistically significant (p value<0.05). Among the 380 respondents, 94% were new TB patients and 46% were sputum positive. Based on respondents perception, 45% respondents were given information regarding taking regular medicine, 29% self protection, about disease 24%, 20% proper sputum disposal. Most of the non compliance group were not given information about disease and treatment had lower compliance with statistically significant association (p value<0.05). About 64% respondents collected drug once a week, 29% daily and rest of the others on a monthly basis. Those who collected drugs in short interval had higher compliance (p value=0.006).

### **Conclusions**

The compliance of TB patients is found to be quite high in the study area. Poverty, large family size, low education status, inadequate awareness about disease and treatment arisen by health worker and no proper advice given by the private practitioners were causes of non compliance. In order to

reduce the number of non compliance, it is suggested to improve information, education and communication prior to TB treatment and follow up.

**Keywords:** compliance; control; DOTS; non compliance; patients; services; tuberculosis.

## **Immunohistochemical Study of Tuberculous Lymphadenitis (2004)**

Pokharel S<sup>1</sup>

<sup>1</sup>Central Department of Microbiology, Trubhuvan University, Kirtipur, Kathmandu, Nepal.

### **Background**

Diagnosis of tuberculous lymphadenitis on the basis of clinical finding in combination with Fine Needle Aspiration Cytology (FNAC) of the lymph node aspirate or hematoxylin-eosine staining of the lymph node biopsy is common in practice. Additional staining of the specimen by Ziehl- Neelson (Z-N) stain may provide a step toward better diagnosis of the cases. Use of alternate method for the diagnosis of tuberculous lymphadenitis may be essential, thus immunohistochemical staining of the lymph node biopsies in combination with Z-N stain may yield a better diagnosis specially in case of lymph node tuberculosis. Study of the immunological changes like effect on T cells/ B cells/ on the lymph nodes during the infection period could be useful in early diagnosis of tuberculous lymphadenitis. Keeping all these factors in mind, this work has been planned to evaluate the efficiency of immunohistochemical staining in the diagnosis of tuberculous lymphadenitis.

### **Methods**

This study was conducted at Patan hospital, during September 2002 to March 2003. Altogether, 40 biopsies collected at Department of Pathology, Patan Hospital were further analyzed. 40 biopsy specimen were stained with Haematoxylin - Eosin stain and Acid fast stain where as 20 biopsies were stained with CD3/ CD20/ S-100 stains respectively and the biopsy cell/tissue features were analyzed.

### **Results**

Among 40 cases of suspected tuberculous lymphadenitis cases, 100% cases showed tuberculosis positive in Haematoxylin-Eosin stain. Whereas Acid Fast Bacilli could be detected in only 10% of the cases. Greater prevalence of tuberculous lymphadenitis was observed between 20-30 years of age with higher percentage of female's involvement. Frequency of Cervical and

axillary nodes involvement were higher than other. In 57.5% of cases, right cervical nodes and in 20% of the cases, axillary nodes were found involved. Multiple nodes involvement was observed in 80% of the cases and bilateral nodes in only 20% of the cases. CD3 cells were present in higher numbers than CD20 cells. CD3 cells were confined to paracortical areas where as higher CD 20 cells were found in follicular area. But due to migratory nature of CD20 cells, they were also found in other parts of lymph nodes.

### **Conclusions**

Immunohistochemical staining techniques, though specific, H-E staining and AFB staining in combination still remains a method of choice for the diagnosis of tuberculous lymphadenitis, in developing country like Nepal, because of cost benefit and availability of immunohistochemical staining reagents.

**Keywords:** biopsies; immunohistochemical; lymphadenitis; nodes; staining; tuberculosis.

## **Post Operative Wound Infection (2004)**

Shrestha ML<sup>1</sup>, Khadka N<sup>1</sup>

<sup>1</sup>Bir Hospital, Kathmandu, Nepal.

### **Background**

Post Operative Wound Infection remains significant causes of post operative morbidity. This prospective study was undertaken to establish whether the endogenous organisms lodged in tissue are the cause of post operative wound infection.

### **Methods**

Patients undergoing surgery in General Surgery Unit II, Bir Hospital were studied for a period of 12 months and they were prospectively followed up till the stitches were removed for the development of wound infection.

### **Results**

A total of 227 of 325 were followed up till the removal of the stitches. The overall incidence of wound infection was 7.92%. Factor that was found to be significantly associated with post operative wound infection was the endogenous organisms lodged in the tissue during the surgical procedure. Use of povidon iodine has reduced the bacterial positivity in the skin and subcutaneous tissue significantly.

### **Conclusions**

Endogenous organisms lodged in the body tissue has significant role in incidence of post operative wound infection. Bacterial positivity can be reduced by the use of povidon iodine and this in turn reduces the post operative wound infection caused by endogenous organisms.

**Keywords:** bacterial positivity; endogenous organisms; post operative wound infection.

## **Prevalence of Lymphatic Filariasis in Districts of Eastern Nepal: A Population Based Cross-Sectional Household Survey (2005)**

Agrawal CS<sup>1</sup>, Jha N<sup>1</sup>, Khanal B<sup>1</sup>, Agrawal S<sup>1</sup>

<sup>1</sup>B.P.Koirala institute of Health Sciences, Dharan, Nepal.

### **Background**

Lymphatic Filariasis is a major public health problem in various parts of the world. It causes permanent and progressive physical disability. Some 120 million people are infected worldwide and the disease is endemic in more than 80 countries and territories. The present study was undertaken to assess the knowledge of study population about lymphatic filariasis and to estimate the prevalence of the disease in Morang, Sunsari and Saptari districts of Eastern Nepal.

### **Methods**

This study was carried out in three districts (Morang, Sunsari and Saptari) of eastern Nepal over a period of three months. Approximately 100 households (400 individuals) were selected by systematic random sampling technique. The filarial survey was comprised of the survey proforma and night blood collections by the laboratory technician. All information was put in the pre coded format. The analysis was done using Statistical Package for Social Sciences (SPSS) 10.0.

### **Results**

The overall prevalence of lymphatic filariasis from a 10000-studied population from three districts of eastern Nepal was 0.1%. District wise

prevalence of lymphatic filariasis was 0.07% and 0.2% in Morang and Saptari respectively.

### **Conclusions**

A health education program can be developed based on the data from the present study.

**Keywords:** eastern Nepal; knowledge; lymphatic filariasis; prevalence.

## **Comparative Study of Awareness regarding HIV/AIDS among Transportation Workers and Female Sex Workers of Sunsari and Morang Districts (2007)**

Sharma D, Regmi R, Pandit A, Rana R, Nepal B

### **Background**

Nepal's vulnerability to HIV/AIDS is fueled by poverty, gender inequalities, low levels of education and literacy, denial, stigma, and discrimination. Though the absolute number of HIV/AIDS cases is still low, there are already "concentrated" epidemics within certain high-risk behaviour groups in Nepal. The main purpose of the study was to compare level of awareness on HIV/AIDS among transportation workers and female sex workers of Sunsari and Morang districts of Nepal.

### **Methods**

It was a descriptive cross-sectional study. Morang district was selected purposively as study area. Altogether 256 transportation workers were selected using simple random sampling technique. Similarly 256 female sex workers were identified from different cities of Morang and Sunsari districts using snowball sampling technique. Data was edited, coded, recoded and tabulated. Data analysis was done with descriptive method with the use of cross table and statistical tools in Statistical Package for Social Sciences software win 12 version.

### **Results**

Comparing the awareness of female sex workers (48%) and transportation workers (52.3%), transportation workers are found a bit more aware than the female sex workers.

### **Conclusions**

The female sex workers are more risky groups than transportation workers to acquire HIV/AIDS

**Keywords:** female sex workers; HIV/AIDS; level of awareness; transportation workers.

## **Serological-Epidemiological and Molecular Study of Dengue Viruses in Nepal (2008)**

Pandey BD

### **Background**

Dengue fever (DF) and more severe forms namely dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS) are caused by dengue virus, transmitted by *Aedes* mosquito. DF/DHF is primarily a disease in tropical and sub tropical areas of the world. Dengue virus infection occurs in more than 100 countries and over 2.5 billion people live in the areas with a risk of infection. Up to 100 million cases of DF and 500,000 cases of DHF and several thousand deaths are estimated to occur annually worldwide. During the past decades, dengue virus emerged in South Asia and DF/DHF epidemics occurred in Bhutan, India, Maldives, Bangladesh and Pakistan. In Nepal, the first case of dengue was reported on 2004 from Chitwan district. The recent outbreak of 2006 was observed in nine districts of Terai including Banke, Dang and Parsa, poses a serious threat of future epidemic of dengue in Nepal.

## Methods

A total of 422 serum samples were collected during viremic period from the patients suspected DF, JE and other viral illness from August to November 2007 in nine districts of Terai region of Nepal and 127 samples were also collected from asymptomatic individuals. IgM ELISA, IgG-ELISA was performed using particle agglutination assay (PA) and IgM ELISA kit on serum samples for both dengue and JE. RNA extraction was performed using QIAGEN RNA EXTRACTION kit from the serum samples collected during viremic phase followed by RT-PCR.

## Results

The result showed that 28 % of the cases were positive for dengue-IgM out of 422 collected serum samples. There was no haemorrhagic manifestation observed among the patients. Bardiya districts showed highest percentage of positive dengue antibodies (64%). *Stegomyia* indices seasonal changes related to rain were identified in all the major cities affected during the 2006 DF/DHF outbreak. To know the possible time of interdiction of dengue in Nepal, IgG ELISA was performed and gave only one positive case out of 127 asymptomatic individuals. Among analysed IgM antibody positive cases, 69.06% were male and 30.88% were female and the highest numbers of positive cases were found in an age group 21-30 (29 %). There was no significant difference was observed in relation to age, sex and occupations of the patient and dengue infection. Two serological methods, PA and ELISA were used to compare their sensitivity and specificity for the detection of IgM antibody of dengue and the result showed that PA assay has sensitivity of 98 % and specificity of 96 %, a positive predicts value of 0.90 and negative predict value of 0.99 in comparison with IgM-capture ELISA. Since PA assay does not required sophisticated instruments and specialized manpower it could be useful and reliable diagnostic test to support clinical diagnosis in district hospitals of Nepal. Molecular diagnosis based on RT-PCR was also performed in an optimize condition for rapid and confirmatory diagnosis and to know the dengue serotype prevalent in Nepal. However, RT-PCR failed to show positive for dengue indicating inappropriate time for collection or

transportation. Virus isolation is undergoing with the collaboration of international collaborator.

### **Conclusions**

The sero-epidemiological study on dengue viruses was conducted in Terai region of Nepal from August to December 2007 shows that 28 % of the febrile patients were positive for dengue infection. In view of the report of outbreak in 2006 it indicates that dengue is firmly established in Terai region of Nepal. It is expected that more extensive outbreak can occur in the coming year with the start of rainy season.

**Keywords:** dengue viruses; outbreak; sensitivity; specificity; sero-epidemiological; terai region.

## **Gender Differences Delays in Initiating Tuberculosis Treatment among Tuberculosis Patients, Far Western Development Region, Nepal (2008)**

Bam TS

### **Background**

In Nepal, at least twice as many men as women are registered for TB treatment. Long diagnostic delay among women has even more adverse effects, as the health and welfare of children and other family members are

closely linked to that of the mothers. Therefore, reducing delays in TB health seeking and diagnosis is especially important among women. This study aims to investigate the gender differences for delay in initiating directly observed treatment short-course (DOTS), among new pulmonary tuberculosis patients.

### **Methods**

This cross-sectional study was carried out in Kailali and Kanchanpur districts of Far Western Development Region between Mansir 2063 and Chaitra 2063. Both quantitative and qualitative methodologies were applied. All the registered new smear positive pulmonary tuberculosis patients under 4 randomly selected DOTS centres of the Kailali and Kanchanpur districts between Mansir 2063 to Chaitra 2063 were the sample population. Four focus group discussions were carried out among the different communities. A standard structured questionnaire was prepared in English and then it was translated by professional translators into Nepali. Modified grounded theory and cut and paste techniques were used for qualitative data analysis. All analyses were conducted using the SPSS statistical package, version 13 for quantitative data.

### **Results**

The mean patient delay was 2.71 months in females and 2.64 months in males. This difference was not statistically significant ( $p > 0.05$ ). The mean patient delay in all patients was 2.67 months. The mean provider delay was found longer in both males (2.86 months) and females (7.58 months). Moreover, it was significantly longer among females than males ( $p < 0.05$ ). The mean total delay was 5.51 months in males and 10.21 months in females. This difference was highly significant ( $p < 0.001$ ).

### **Conclusions**

It was observed that provider delay was significantly longer in female than male patients. The risk factors for patient delay and provider delay identified in this study should be the area under discussion of future interventions in order to reduce delay in delivery of DOTS treatment to tuberculosis patients

in general and female TB patients in particular, and hence transmission of the disease in the community.

**Keywords:** delays; far-western region; gender differences; patients; treatment; tuberculosis.

**Prevalence of Pulmonary Tuberculosis among HIV Infected Persons  
in Pokhara, Kaski, Nepal (2008)**

Verma SC<sup>1</sup>, Dhungana GP<sup>2</sup>, Joshi HS<sup>1</sup>, Kunwar HB<sup>3</sup>

<sup>1</sup>Department of Community Medicine, Manipal College of Medical Sciences, Pokhara, Nepal, <sup>2</sup>Department of Microbiology, Siddhanath Science Campus, Mahendranagar, Nepal, <sup>3</sup>National TB Control Programme, Nepal.

## **Background**

Tuberculosis kills more people than any other single infectious diseases. The disease is more prevalent in crowded, low income groups, alcoholics, smokers, close-contacts of known tuberculosis cases and surprisingly high in immuno-compromised persons, particularly in HIV infected persons, both in persons with prior tuberculosis infection who are newly infected with HIV and in persons with prior HIV infection who are newly infected with tuberculosis. This study aims to explore HIV/TB co-infection pattern in HIV infected persons of Pokhara, Kaski, Nepal

## **Methods**

This work was carried out at the Regional TB centre (RTC), Pokhara during December 2006 to December 2007. Altogether 184 HIV positive persons were included in the study. HIV positive persons were selected from Friends of Hope (FOH), Ranipauwa, Community Support Group (CSG), Damside, Nauloghunti (New Road) and Paluwa (Srijana Chowk). HIV positive person's selection was done by random sampling method using the lists available in the respective sites. 50% of 368 HIV positive persons registered over one year in the above organizations working for HIV/AIDS were randomly selected to get a sample size of 184. After taking informed consent, they were interviewed to fill up the pre-structured questionnaire. Then, specimens were collected for investigation of TB. The sputum specimen was collected for 3 times (The first Spot specimen, early morning specimen, and second spot specimen). All the specimens were transported to the Mycobacteriology Research Laboratory, RTC and specimen processing was done as per standard Microbiological operating procedure. Data processing and analysis was done by using SPSS 11.5 (Statistical Package for Social Science version 11.5)

## **Results**

Overall prevalence of TB was found to be 6%. Prevalence of tuberculosis is higher in males (8.2%) in comparison to females (2.7%). All the TB/HIV co-infected patients were in the productive age group i.e., 21-40 years.

### **Conclusions**

HIV positive persons showing sign and symptoms of TB should immediately be subjected to the diagnosis of TB and vice versa. Specific guidelines regarding their investigation and treatment should be formulated and put into effort as a part of HIV care and support service.

**Keywords:** co-infection; HIV; prevalence; TB/HIV; tuberculosis.

# **Loop Mediated Isothermal Amplification for the Direct Detection of Human Pulmonary Infection with Mycobacterium Tuberculosis, Mycobacterium Avium Complex and Mycobacterium Kansasii from Sputum (2009)**

Pandey BD

## **Background**

Rapid species identification and proper use of drugs are key requirements for the effective treatment and case management of tuberculosis. The development and evaluation of new diagnostic technique, which can diagnose causative agent in simple and rapid way, is the necessity of this century. Loop-Mediated Isothermal Amplification (LAMP) provides new possibilities of above requirements for direct detection of *M. tuberculosis*, *M. avium* complex and *M. kansasii* in sputum samples.

## **Methods**

This study was carried out 130 sputum samples from suspected pulmonary tuberculosis patients were included in this study. All these samples were processed for flurochrome staining and were subjected to culture and LAMP. Thus sputum specimens were included in this study to compare them with microscopy, culture and LAMP.

## **Results**

Among them 50(38.46%) were found to be positive by flurochrome staining, culture and LAMP. Similarly 48(36.92%) samples were negative by all diagnostic methods. 1(0.77%) microscopy and culture positive sample was negative by LAMP. Similarly 3(2.31%) microscopy and LAMP positive cases were negative by culture. 3(2.31%) culture positive cases were negative by both microscopy and LAMP. Eight (6.16%) culture negative cases were positive by LAMP where as 17(13.07%) microscopy negative samples were positive by culture and LAMP. Out of 78(100%) total LAMP positive cases, 76(97.44%) were positive for *M. tuberculosis* and remaining 2 (2.56%) were positive for *M. intracellular*. While comparing LAMP results with gold standard culture, the sensitivity, specificity, predictive value of positive test, predictive

value of negative test, percentage of false negative and percentage of false positive of LAMP were found to be 94.36%, 81.36%, 85.90%, 92.31%, 5.63% and 18.64% respectively. Similarly, LAMP had sensitivity 98.14% and specificity 67.11% while compare with microscopy.

## **Conclusions**

LAMP is highly sensitive and specific molecular technique, which can be used effectively for the diagnosis of clinically, microscopically, and culturally confusing cases thus facilitating the effective treatment and case management of tuberculosis and other atypical mycobacterial infection. Due to its easy operation and rapid amplification efficiency, it can be used in well-equipped laboratories for clinical use if sample preparation, nucleic acid extraction and cross-contamination controls are addressed.

**Keywords:** loop mediated isothermal amplification; *M. avium* complex, *M. kansasii*, *M. tuberculosis*.

## **Skin Diseases: Prevalence and Impact in the Quality of Life of the Community Members in a Rural VDC (2009)**

Shrestha DP<sup>1</sup>

<sup>1</sup>Department of Dermatology, Maharajgunj Campus, Institute of Medicine, Kathmandu, Nepal.

### **Background**

Skin diseases are the most common health problems, for which community members seek health care in Nepal. Skin diseases are responsible for severe disabilities and are among the major cause of social stigmatization. There is significant impact of skin diseases in the quality of life of the community members. Most skin diseases are preventable and treatable.

### **Methods**

This is a community based cross sectional descriptive study. First a baseline household survey was done in Talku dudhechaur VDC. Then 4 health camps were conducted in the same VDC, during which skin diseases were diagnosed. The patients diagnosed with chronic and/or severe skin diseases were interviewed with Dermatology Life Quality Index questionnaire with additional questions.

### **Results**

The overall prevalence was 20.1%, with a slightly higher prevalence in females (22.5%) than males (18%). The prevalence of skin diseases in children was 28.1%. The Dermatology Life Quality Index score ranged from 7 to 19 with a mean score of  $10.7 \pm 3.2$ . Among all skin diseases, five groups of disorders - eczemas, pigmentary disorders, acne, urticaria & pruritus - were the skin problems with highest prevalence and highest impact on the quality of life of the community members. The 10 most common skin diseases seen were eczemas, pigmentary disorders, p.alba, acne, urticaria, moles & lumps, pruritus, viral infections, pyodermas & fungal infections.

## **Conclusions**

Common skin problems are easily preventable and treatable at the community and primary health care level. A coordinated and timely intervention towards prevention and management of skin diseases is essential for overall health development of the Nepalese population.

**Keywords:** impact; management; prevalence; prevention; skin diseases; skin problems; quality of life.

### **A study on Risky Behavior on Kala-azar Outbreak among Socio-Economically Poor and Marginalized Communities of Jhapa district, Nepal (2009)**

Samudaik Swastha Paryawaran Sundhar Kendra, Damak, Jhapa, Nepal.

## **Background**

Kala-azar is a re-emerging serious public health problem in the terai region of Nepal and one of the major threats to public health. This research aims to study the risk behavior for Kala-azar outbreak among socio-economically poor and marginalized communities.

## **Methods**

A descriptive study was carried out in two VDCs of Western Jhapa for a period of three months. The main target population was the marginalized communities having at least 2 cases of Kala-azar detected among the selected VDCs. Data was collected using structured questionnaire and analyzed using Statistical Package for Social Sciences.

## **Results**

It was found that more than half of the respondents (55%) were aware regarding danger of Kala-azar. Only 48% of the respondents had good knowledge and among them only 39% had good practice. Respondents knowledge was found to be significantly associated with their practices ( $p < 0.001$ ). Similarly, respondents attitude also associated significantly with their practices ( $p < 0.001$ ). Knowledge, attitude and practices of the respondents were found to be significantly associated with their preventive awareness ( $p < 0.001$ ).

## **Conclusions**

The awareness regarding Kala-azar and sand fly control measures was found to be satisfactory. More emphasis should be laid on putting this knowledge into practice which can be achieved by more aggressive health education campaigns in the community through the health workers and involving schools in the community.

**Keywords:** attitude; awareness; kala-azar; knowledge; marginalized; outbreak; poor; practice.

### **Role of Serology, Neuroimaging and Stool Examination in Diagnosis of Neurocysticercosis (2010)**

Sapkota K, Sapkota K, Dumre SP, Karmacharya K, Thapalia A, Singh S

#### **Background**

Neurocysticercosis (NCC) is the infection of Central nervous system by the larval stage of *Taenia solium* (pork tapeworm). This tapeworm is a public health problem in most developing countries where pigs are raised and pork is consumed and where poverty, illiteracy and deficient sanitary infrastructure are common. The main objective of this study is to find out the diagnostic significance of Serology and Neuroimaging and to detect intestinal carriers of the tapeworm.

#### **Methods**

The design of the research is exploratory and descriptive and also analytical. It is based on qualitative questions, the laboratory data and imaging studies. The study site is Manipal Teaching Hospital (MTH), Pokhara. The patients of pediatric age group (age 1 to 15 years) who visit to the pediatric department either as an out-patient or in-patient are included in the study. During the study period from January 2008 to January 2010, a total of 200 samples of

serum for serology and Stool for microscopy was collected and microbiologically processed.

### **Results**

Out of 200 samples of serum, 100 were from the cases with diagnosis of Neurocysticercosis. Pig rearing was seen in 26% of the cases. And 30% (8) of pig rearing children had harbor taenia species in intestine. The most commonly affected age group was 8-14 years. ELISA sensitivity, specificity, positive predictive value and negative predictive value were 87%, 84%, 84.7% and 86.6% respectively.

### **Conclusions**

Neurocysticercosis should be suspected in any cases with neurological symptoms (especially partial seizure) in Taenia endemic regions. Neuroimaging should be done in cases with clinically and epidemiologically suspected Neurocysticercosis to identify the type, location, nature/stages and number of intracranial lesions.

**Keywords:** cases; diagnosis; Neurocysticercosis; Neuroimaging; serology.

## **Risk Assessment on STIs and HIV Transmission among Migrant Labours in Rukum District (2003)**

Budathoki HB, Devkota GP

### **Background**

Studies carried out in Nepal have shown a higher than average prevalence of STIs and HIV/AIDS among female sex workers, common intravenous drug users, transport workers, migrant labours compared with rest of the people. There is a scarcity of fact data about the number of migrant labours in Nepal. It is projected about 80 percent of total male independent population and 5 percent of total independent female population are being emigrated from Rukum to India either due to poor economic condition or Maoist insurgency. This study therefore focuses on assessing the risk of STIs and HIV/AIDS transmission among migrant labours in Rukum district.

### **Methods**

The study depends mainly on primary data derived from a descriptive design with clinical examination, serological testing and survey questionnaire. A total of 180 migrant labours including 172 males and 8 females were selected from different 10 VDCs of Rukum district. Data entry, processing and analysis were done in Epi-info statistical software.

### **Results**

About 15.57% of blood sampled migrant labours got affected with Syphilis. Likewise 7.78% and 1.16% of blood sample had fallen under Gonorrhoea and Trichomonas Vaginalis respectively. Most of them were infected with multiple infections like Syphilis and Gonorrhoea. Among the blood sampled populace, one was found to be infected with HIV/AIDS. Risk factors associated with transmission of STIs and HIV/AIDS were less use of condom, poverty, Maoist insurgency, isolation from their life partners, high intension of sexual arousal keeping secret of STIs and HIV/AIDS problems, lack of knowledge about the modes of transmission and preventive measures, not following medical treatment, lack of personal hygiene and sanitation etc.

### **Conclusions**

Syphilis, Gonorrhoea and Trichomonas are still common than HIV infections and there is low prevalence of HIV infection in population of Rukum. However non-recognition of condom use as proper way to protect oneself against HIV/AIDS put the population at risk of greater epidemic.

**Keywords:** gonorrhoea; HIV/AIDS; migrant labours; prevalence; risk; syphilis; trichomonas vaginalis.

## **Jajarkot Diarrhoea Outbreak, 2009**

Nepal Health Research Council, Ramshah Path, Kathmandu, Nepal.

### **Background**

The information on outbreak was first noticed when the public media highlighted about a death and large number of diarrhea cases in Rokaya village development committee (VDC) of Jajarkot district on 20th Baisakh 2066. The Rapid Response Team was mobilized on 21 Baisakh 2066 in the same VDC and treated 224 patients. The mortality reduced to zero by the

end of Jestha 2066. According to the District Public Health Office Jajarkot and the public media, the morbidity and mortality due to diarrhea started increasing from the third week of Ashad.

### **Methods**

The Nepal Health Research Council (NHRC) called a meeting and felt the need to specify the agents responsible for outbreak by conducting an outbreak investigation from research perspective. The Executive Chairman chaired the meeting and formed a member team for outbreak investigation. This team was responsible to collect epidemiological data and stool specimens to know the epidemiological pattern of disease as well as confirmation of diagnosis. A laboratory technician joined the team in Jajarkot with required transport media to collect stool specimen. Epidemiological data were analyzed by the team of Nepal Health Research Council and the laboratory samples were diagnosed by National Public Health Laboratory.

### **Results**

There was one district hospital and primary health care center in the Jajarkot district. Similarly, there were maximum of 25 sub health posts; one in each VDC. Out of the total morbidity 425 as registered in DHO hospital Khalanga, 58% were male and 42% were female. 15-44 age-group which was the productive age group, was extremely affected by the diarrhoea. Disadvantaged Janajatis were in the range of highly affected caste group. There has been maximum number of morbidity (97) in the fourth week of Ashad. From the fourth week of Jesth the number of mortality increased gradually and reached at peak (38) in the fourth week of Ashad. However this trend decreased in the first week of Shrawan. Out of the total 13 lab tests, 5 were diagnosed *Vibrio cholera*, *Salmonella* and no microorganism were detected from the test. On average the Attack Rate was 8.2% and CFR was 1% with number of cases and deaths of 12,500 and 128 respectively. Around 10 deaths out of 128 were in the health institutions, which showed that those patients who had access to public health institutions had less number of mortality.

### **Conclusions**

Productive age group and disadvantaged group are highly affected. The trend of morbidity was steady and no mortality was observed till the end of Jesth. There was a sudden increase in morbidity and mortality from the month of Ashad. Morbidity trend is still increasing till the first week of Ashad, whereas mortality trend is decreasing. Causative agents responsible for outbreak might be *V. cholera*.

**Keywords:** attack rate; case fatality rate; health institutions; morbidity; mortality; outbreak.

## **Outbreak Investigation Report of Influenza like Illness (ILI) in Jajarkot District in 2015 (2015)**

### **Background**

The World Health Organization defines influenza like illness (ILI) as an acute respiratory infection with measure fever of  $\geq 38\text{ C}^\circ$ , cough and with onset within the last 10 days. This year onset of ILI outbreak in Jajarkot district was reported on 1 April (18 Chaitra) 2015 when it came in media that 20 students of Archane VDC were ill and some deaths in next day. By the third week of April, diseases had already noted in Paink, Sakla, Nayabada, Telegaun, Rami Danda, Rokayagaun, Laha, Kortang and Majkot and could spread to all 30 VDCs of the district and surrounding districts like Kalikot, Rukum, Salyan, Dolpa, Jumla, Surkhet and Dailekh in the absence of strong public health response and early treatment indicating the rapid spread of disease.

### **Methods**

We carried out planning meeting at central and district level for collecting data for the study. Record of death cases were collected from District Public Health Office and outpatient visit line list was obtained from health facilities and camps of three VDCs: Talegaun, Archane and Pajaru. The death cases reported from these three VDCs was verified by our team using verbal autopsy questionnaire. The probable cause of reported death was confirmed by an independent team of expert. In-depth interviews were conducted with health professionals and patients. Records of laboratory confirmed influenza A or swine flu cases was obtained from National Public Health Laboratory and were followed up via home visit and telephone conversation to assess current situation after treatment. Exit client interviews were also conducted in three VDCs.

### **Results**

During the outbreak March-April 2015, more than 10,000 people received treatment and 35 deaths from various diseases were reported. Among the death cases, only 6 deaths (17%) were chronic obstructive pulmonary disease (COPD) with ILI symptoms, 10 (29%) cases were COPD with complications (without symptoms of ILI), 1 death was suspected ILI, causes

of 7 deaths could not be identified bases on reported signs and symptoms and rest cases were of rabies, neonatal infection, neonatal sepsis, tuberculosis, drowning, severe malnutrition, breast cancer, Gullain Barre Syndrome (GBS) illness etc. A total of 16 cases were found confirmed cases of swine flu or H1N1 out of total 49 samples tested. Out of 3001 patients visited for treatment in health camp and health institutions of Talegaun, Pajaru and Archane, only 233 (7.8%) were suspected cases of ILI including common cold. The probable major factors behind frequent outbreak of communicable diseases in Jajarkot district were influx of migrating workers from India, poor hygiene and environmental sanitation, low nutrition status of people, low educational level as well as economic status, low awareness for prevention and control of different health problems and diseases, unavailability of health professionals at peripheral level health facilities, lack of medicine compliance as well as high level of antibiotics supply from pharmaceutical shop resulting drug resistance and high prevalence of smoking and alcoholism.

### **Conclusions**

Majority of cases visited for treatment were chronic patients of respiratory illness, gastrointestinal problems as well as minor illness such as fever and headache (>58%) and only few were ILI (8%). Most of the problems are related to poor economic status of people, poor nutrition status, poor practice of hygiene and sanitation, alcoholism and smoking.

**Keywords:** influenza like illness; investigation; outbreak; respiratory illness.

