

Tuberculosis diagnosed / managed at NGMC, Teaching Hospital, Kohalpur: A joint private-public effort

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Abstract

Introduction: Medical colleges both in public and private sector in Nepal have been supporting national TB control program (NTP) in its effort to control TB and its eventual elimination. Official collaboration between Nepalgunj Medical College (NGMC), a private sector medical college and NTP was developed in 2000; a joint private-public initiative to contain TB.

Objectives: This study has been done with the objectives a) to review the TB cases diagnosed/managed at NGMC Teaching Hospital (TH), Kohalpur, in Financial Year 2063/2064 (Shrawan 63 Asad 64) and b) to assess the contribution of NGMC, TH, Kohalpur towards TB control.

Methodology: This is record based review of TB cases diagnosed, categorized, treated at NGMC TH, Kohalpur and referred to respective health facilities in Financial Year 2063/2064 (Shrawan 63 Asad 64). And case detection with respect to detected TB cases in Midwestern Region and entire country.

Results: Around 13% of detected TB cases for Mid Western Region and 1.5 % of detected TB cases at national level were diagnosed at NGMC, TH, Kohalpur. 35% of cases were of pediatric TB; lymph node TB, pleural effusion & abdominal TB were common form of extra pulmonary (EP) TB seen in children. 20.8%, 44.8% and 34.4% of cases in adults were of sputum smear (SS) + pulmonary TB (PTB), SS- PTB & EPTB respectively; pleural effusion, lymph node TB, Miliary & abdominal TB were common form of EPTB seen in adults.

Conclusion: Contribution of NGMC, TH, Kohalpur towards case detection seems to be significant. The role of medical colleges in TB control can not be underestimated.

Keywords: TB Control, PP Mix, Medical Colleges, Nepalgunj Medical College, Nepal

Role of private health sector in national disease control has well been recognized globally¹. Linkages between public and private health sector has been established worldwide for communicable disease control including TUBERCULOSIS (TB)^{2, 3}. Medical Colleges / Schools / Institutions both in public and private sector have been contributing to National TB Control Program (NTP) in its efforts to control TB including multi drug resistant (MDR) TB / extensively drug resistant (XDR) TB^{4, 5, 6, 7, 8}.

Medical colleges both in public and private sector have been supporting NTP, Nepal in diagnosing and managing TB patients, imparting health education, doing advocacy and conducting research^{9, 10}.

Nepalgunj Medical College (NGMC), a private sector medical college established in 1997 has been contributing towards TB control since its establishment. Official collaboration between NTP, Nepal and NGMC was developed in 2000⁹. This study has been conducted to assess the contribution of NGMC, Teaching Hospital (TH), Kohalpur with

the objectives: a) to review the TB cases diagnosed/managed at NGMC, TH, Kohalpur, in Financial Year 2063/2064 (Shrawan 63 Asad 64) and b) to assess the contribution of NGMC TH, Kohalpur towards TB control.

Methodology

This is record based review of TB cases diagnosed, categorized and treated at NGMC TH, Kohalpur and referred to / District Hospital / Health Post / Sub Health Post in Financial Year 2063/2064 (Shrawan 63 to Asad 64). And cases detected by NGMC TH, Kohalpur with respect to the estimated / detected TB cases in Midwestern Region and entire country.

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NGMC has provided human and physical facilities required to run the DOTS center. The trained staff nurse is in-charge of DOTS center and the trained laboratory technician carries out sputum test and participates in the diagnostic quality control system of NTP. Referral system for the diagnosed TB cases from the institution has also been established. NTP Nepal provides anti TB drugs, staining solution, slides, recording and reporting forms and registers and refresher trainings. Compiled reports are being sent regularly to NTP on monthly basis and sister in-charge of DOTS center participates in monthly and quarterly meeting organized by NTP.

Screening of TB suspects is being done both at Out-patient Department (OPD) and In-patient Department (IPD): Medicine including Chest Medicine, Pediatric, Surgery, Ortho, Gynecology and others. After diagnosis, TB cases are being referred to Chest Clinic /DOTS Center where cases are reviewed, categorized and tackled as follows:

1. OPD and IPD cases of catchments areas are registered in TB register and treatment is being provided as per NTP protocol
2. Anti TB drugs are also being provided to IPD patients of non catchments areas as per NTP protocol till their stay in hospital and recorded in register. They are being referred to respective health facility with referral form after discharge.

3. Non-catchments areas OPD cases are recorded in register and being referred to respective health facility with referral form.

Treatment is being provided to the patients as per NTP policy guidelines and The International Standards for Tuberculosis Care (ISTC) 11, 12.

Results

In Nepali financial year 2063/2064 (Shrawan 63 to Ashad 64) (2006/2007) 562 TB cases were diagnosed at NGMC, TH, Kohalpur (Table 1). In children 91 (46.4%) were between 5 months to < 5years of age and 105 (53.6%) between 5 - 14 years; while in adults 277 (75.7%) were between 15 to <55 years and 89 (24.3%) between 55 years and above.

In children 150 (76.5%) had pulmonary TB and 46 (23.5%) extra pulmonary TB. Detail of extra pulmonary TB is given in Table 3.

In adults 76 (20.8%) had smear positive pulmonary TB (SS+ PTB), 164 (44.8%) smear negative pulmonary TB (SS- PTB) and 126 (34.2%) extra pulmonary TB (EPTB). Detail of extra pulmonary TB is given in Table 4.

Six cases of MDR TB are under treatment; 5 cases of Treatment Failure of CAT II and one is contact of MDR TB patient, she is currently under treatment.

Estimated population vs. case detection details for Midwestern Region is shown in Table 5.

Table 1: TB cases diagnosed at NGMC, TH, Kohalpur

Variable	Number (Percent)
TB cases Diagnosed, Categorized & Treated	89 (15.8%) Male = 55, Female= 34
TB cases Diagnosed, Categorized & Referred:	473 (84.2%) Male = 309, Female= 114
Total	562 (100%) Male = 364, Female= 148

Table 2: Children and Adult TB cases

Variable	Children (5month - 14 Years)	Adults (15 years & Above)
TB cases Diagnosed, Categorized & Treated	42 (47.2%) Male = 27, Female= 15	47 (52.8%) Male = 28, Female= 19
TB cases Diagnosed, Categorized & Referred	154 (32.5%) Male = 100, Female= 54	319 (67.5%) Male = 209, Female= 110
Total	196 (34.9%) Male = 127, Female= 69	366 (65.1%) Male = 237, Female= 129

Table 3: Children Extra-pulmonary TB Cases

Lymph Node	Abdominal-	Pleural Effusion	Menin-gitis	Bone	Tuberculoma Brain	Pericardial Effusion	MTB	Total
15 (32.6%)	12 (26.0%)	7 (15.2%)	3	3	2	2	2	46

Table 4: Adult Extra-pulmonary TB Cases

Type	Cases
Pleural Effusion	33 (31.4%)
Lymph Node	31 (29.5%)
Miliary	11 (10.5%)
Abdominal	8 (7.6%)
Bone & Joint	5 (4.7%)
Pericardial Effusion	5 (4.7%)
Skin	3
Spine	2
Urinary Tract	2
Meningitis	2
Tuberculoma Brain	1
Breast	1
Perianal	1
Total	105

Table 5: Estimated population vs. case detection for Midwestern Region^{13, 14, 15}

Estimated target of Midwestern Region population for financial year 2063/2064	3413799
*Estimated TB cases for Midwestern Region for financial year 2063/2064	Around 6000
**TB case detection for Midwestern Region for financial year 2063/2064	Around 4350
TB case detection at NGMC TH Kohalpur for financial year 2063/2064	562 9.36 % of estimated TB cases for Midwestern Region 13% of TB case detection for Midwestern Region

*Estimated incidence of all TB cases in Nepal in 2063/2064 (2006/2007) 172/ 100,000

**Case detection rate in 2063/2064 (2006/2007) in Nepal 128/100,000

Estimated population vs. case detection for Nepal in 2063/2064 (2006/2007)^{13, 14, 15}

- Incidence of all TB cases is in Nepal 172/ 100,000
- Estimated target population for 2063/2064 (2006/2007) was 2, 62, 39,521
- Estimated number of TB cases (all type) for 2063/2064 (2006/2007) was around 48500
- Case detection rate in 2063/2064 (2006/2007) was 128/100,000

- Number of TB cases (all type) detected in 2063/2064 (2006/2007) was around 36000
- TB case detection at NGMC TH Kohalpur for financial year 2063/2064 was 562 (1.56% of TB case detection for Nepal)

Assumption of Case Detection by Medical Colleges in Nepal in 2063/2064 (2006/2007)

It is assumed that each medical college detected 1.5% of total detected cases in Nepal, then 12 Medical Colleges (2 in public sector & 10 in private sector)

might had detected (1.5% * 12= 18. %) around 18% TB cases (all types) in 2063/2064 (2006/2007)

Summary findings

- Around 9.36% of estimated cases for Mid Western Region (around 13% of case detection) were detected at NGMC TH Kohalpur; (contribution towards case detection seems to be significant) and 1.56% of TB case detection for Nepal
- 35% of cases were of Pediatric TB; percentage was comparably high
- Lymph Node TB, Pleural Effusion & Abdominal TB were common form of EPTB seen in children
- 20.8%, 44.8% and 34.4% of cases in adults were of SS+ PTB, SS- PTB & EPTB respectively; percentage of adult SS- PTB cases and EPTB cases was comparably high
- Pleural Effusion, Lymph Node TB Military & Abdominal TB were common form of EPTB seen in adults
- Medical Colleges might had detected around 18% TB cases (all types) in 2063/2064 (2006/2007)

Discussion

Medical Colleges play a critical role in TB control for two reasons: 1) as the medical opinion leaders and trend setters, medical college consultants shape the attitudes of their peers and of the next generations of physicians, 2) because of their role as referral centers, medical colleges treat a large number of TB patients^{5, 6, 9}.

Medical colleges both in public (2 institutions) and private sector (10 institutions) in Nepal have been supporting NTP in its effort to control TB and achieving targets set at national, regional and global level by contributing towards case detection, case management and other related activities^{9, 16}.

It was assumed that around 18 % of country TB case detection done by medical colleges in Nepal in year 2006/2007; the data is comparable to TB case detection done by medical colleges under revised national TB control program of India in 2005⁷.

NGMC, TH, Kohalpur, a private sector medical college contributed significantly towards case detection in year 2063/2064 (2006/2007); around 13% of case detection of Mid Western Region. Around 35 % of TB cases were extra-pulmonary, which seemed to be high as far as overall national data is concerned, this could be due to cases being

referred from different parts of Mid Western Region for diagnosis but it is comparable to cases detected by Nepal Medical College, Kathmandu, Nepal, that is around 35%¹⁰. Percentage of adult smear negative pulmonary TB cases was high, which could be due to referral; in addition to that there may be possibility of over diagnosis¹⁷. Percentage of Pediatric TB was comparably high, which could be because of referral; possibility of over diagnosis is there as pediatric TB is difficult to diagnose compared to adult TB and diagnosis is nearly always presumptive¹¹. Patients were categorized, treated/referred to respective health facilities as per NTP policy guidelines and care provided as per The International Standards for Tuberculosis Care (ISTC)^{11, 12}.

The role of medical colleges in TB control cannot be underestimated. Medical colleges are playing crucial role in strengthening national TB control program of Nepal. Beside diagnosing and managing TB, they impart appropriate knowledge and skills and bring about attitudinal changes among future doctors to enable them to manage TB effectively. Alongside teaching, these are taking part in service delivery, research, advocacy, national program planning and evaluation.

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