

ORIGINAL PAPERS

Health Screening for Gurkha families in UK by chest X-ray, Heaf and blood testing: is it worthwhile?

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SUMMARY

This paper reports the chest X-rays, Heaf tests and haematology findings on a population of Gurkha wives and their children who arrived in the UK to accompany their husbands on an army base in 1997-8. The conclusions from this study are that there is no benefit from performing chest X-rays, but that screening for rubella and iron deficiency anaemia should continue.

Keywords

Gurkha, Health Screening, Tuberculosis, Heaf Tests

Background

The withdrawal of British Forces from Hong Kong resulted in the loss of many accompanied Gurkha postings. One of the measures adopted to reduce separation was to bring wives and children of some Gurkha soldiers to live in army quarters in Sandhurst, whilst their husbands served with the Demonstration Company of the Royal Military Academy. Although having accompanied tours in UK was new for Gurkha soldiers, it is expected to be a long-term ongoing commitment. The families started arriving from June 1997 and average 35 wives plus their children at any one time. Although they could choose a civilian GP surgery if they wished, it was expected that most would choose to register with the military practice. Discussions were undertaken on possible health screening, but no relevant protocol had previously been devised.

Earlier work from Hong Kong (1) showed that a requirement for an annual chest X-ray for all Gurkha soldiers and their dependants was neither cost effective nor productive in screening for active pulmonary tuberculosis. Since that date the global threat of tuberculosis has increased so much that in 1993 the World Health Organisation took the unprecedented step of declaring the disease a global emergency (2). The problem had been fuelled by the pandemic of HIV infection and AIDS, and the emergence of drug and multidrug resistance (3). A local decision was made to undertake chest X-rays on dependants, with Heaf tests and blood screening. Blood sampling would include full blood counts plus hepatitis B, rubella and VDRL serology.

Methods

On arrival at Sandhurst the Gurkha families were encouraged to register with the military practice. Their health needs were helped by leaflets translated into Gurkhali and the use of a part time interpreter. On registering, the families were offered health screening, with bloods to be taken in the practice and the chest X-ray in Frimley Park Hospital (FPH). A brief medical questionnaire was completed by patients. This included administrative details, history of illnesses and symptoms with particular emphasis on respiratory, obstetric and gynaecology history and vaccination status.

There were many difficulties with language and translation, including the diagnosis of possible pregnancy from history, examination or testing. It was soon learned that many families were only in the UK for a very short period and it proved difficult to review the patients at appropriate times especially for Heaf test reading. Medical staff visited the families in the unit to explain the reasons for the survey and to encourage support.

The data was stored initially on the Meditel computer system. Checks on the radiology findings were made in the X-ray department of FPH. The data was transferred to a Microsoft Access database.

Results of Chest X-rays.

A total of 52 patients had X-ray reports. 2 patients had X-rays in FPH which were not reported. The age ranges are broken down into those of 16 years and above, and those below. They are recorded in Table 1.

Table 1 Chest X-ray results by age

Age	Normal CXR	Abnormal CXR
> 16 years	22	3
< 16 years	26	1

Of the abnormal adults one showed a calcified granuloma adjacent to the left hilum with no active focal lung lesion. The second demonstrated no lung lesion or adenopathy, though previous cardiac surgery was noted through a median sternotomy. The third abnormal suggested a degree of left ventricular failure. The abnormal child aged 5 had vague perihilar shadowing, nodular in areas, probably normal in view of the child's age. Another child was classed as normal, but with slight bronchial wall thickening which might have

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been due to viral infection.

Those females who were or possibly might have been pregnant were excluded, as were those whose medical records contained a normal CXR result reported less than 2 years prior to arriving in the UK.

Results of Blood Tests

The figures for haemoglobin are in Table 2. The serology results are in Table 3.

Table 2 Results of haemoglobin estimations

Hb < 100 g/L	Hb 100 - 115 g/L	HB > 115 g/L
1	6	19

Table 3 Result of blood tests for rubella, hepatitis B and syphilis

	Rubella	Hepatitis B SAg	VDRL/TPHA
Positive	14	0	0
Negative	1	18	24
Equivocal	1		

Results for Heaf Tests

A total of 41 patients had valid Heaf test results, 33 of which were Grade 2-4. Of the 8 negatives, 3 were in adults. After excluding pregnancy all negative patients were offered booster BCG in accordance with current guidelines (4) although this vaccine is frequently known to be ineffective (5).

Discussion

There were only 4 abnormal chest X-ray results. The cardiac surgery for atrial septal defect was already well documented, and the patient with left ventricular failure had hypertension and was on treatment. The patient with calcified granuloma was clinically well, as was the child. No clinical interventions were made as a result of the radiology reports. All X-rays have costs in terms of financial, radiation and time for each patient. Each PA chest X-ray costs between £15 and £40 depending on how the administrative costs are calculated. The radiation dose for each patient was low at approximately 0.05 mGy per film.

There were no positive VDRL / TPHA or Hepatitis B SAg tests. Rubella showed one negative and one equivocal. Both these had rubella immunisation, one being delayed until after the successful completion of a

normal pregnancy. There was one case of iron deficiency anaemia (Table 2) and this was corrected.

The Heaf tests were positive in 80% of patients. No active tuberculosis was discovered in either an adult or a child.

Conclusion

Following this study of a small number of new Gurkha families in one practice at Sandhurst, it can be concluded that it is not beneficial to undertake screening of the wives and children by chest X-ray on arrival in UK. The clinical management was not altered and no additional information was obtained. This finding is consistent with that earlier reported in a Hong Kong setting (1) and has not altered with the increase in tuberculosis worldwide following the arrival of HIV and drug resistance.

Iron deficiency anaemia remains a problem; it is thus worthwhile to test routinely this population with its many pregnancies. Testing for rubella immunity lead to interventions and possibly the prevention of congenital rubella syndromes. There were no positive test results for syphilis or hepatitis B.

It is likely that the presence of Gurkha families in UK married quarters will continue and may spread further in UK. This paper has demonstrated one area where cost savings can safely be made without detriment to their health.

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