

## Introduction

Felege Hiwot Referral Hospital (FHRH) is located in the city of Bahir Dar in Ethiopia. It serves a population of 7 million people and admits around 30,000 inpatients per year. Bahir Dar is the only settlement in a large area, hence FHRH serves a largely rural population. This can result in patients opting not to come to hospital, delayed presentations and patients dying before reaching hospital. Due to cultural beliefs and ease of access, patients often use traditional healers as opposed to coming to hospital. Due to these factors there is likely a large under-reporting of cases.

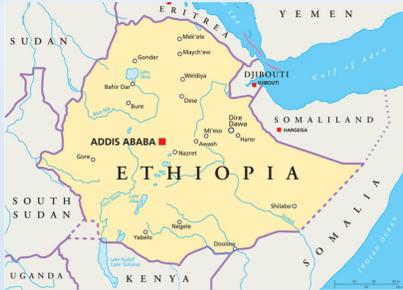


Figure 1: Map of Ethiopia [1]

The leading causes of variceal haemorrhages in the developed world are alcohol related liver disease and non-alcoholic fatty liver disease. Guidelines for management include:

- Medications - antibiotics, terlipressin and prophylactic beta blockers
- Interventions – endoscopic banding and blood transfusions

The underlying aetiology and subsequent management of variceal haemorrhages is well documented in developed countries however, there is significantly less data from developing countries.

## Aims

The aim of this study was to compare the aetiology and management of patients presenting with variceal haemorrhage to Aberdeen Royal Infirmary (ARI) and its allied FHRH, Ethiopia.

## Methods

Two medical students spent their electives performing retrospective case note reviews of all patients presenting with variceal haemorrhage to FHRH between September 2013 and September 2015 and ARI in a similar time period between January 2013 and December 2015. Patients were identified from the Ward Register. Case notes were examined for patient demographics, symptoms, investigations, management and mortality data.

There were 66 patients presenting to FHRH and 129 patients presenting to ARI during the study period. Mean age at presentation was 37.7 (FHRH) and 57.4 (ARI). Interestingly there were 4 patients in the FHRH group under 15 and all of these cases were caused by schistosomiasis.

## Underlying Aetiology of Varices

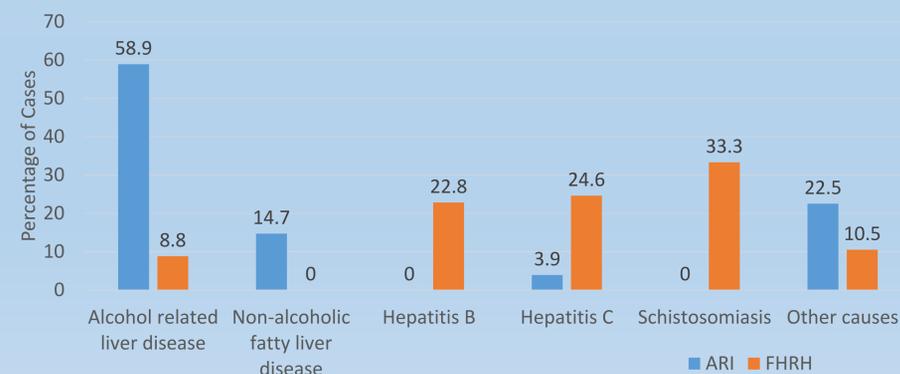


Figure 2: Aetiology of Varices in ARI [2] and FHRH

As seen in figure 2, the causes of varices vary massively between ARI and FHRH. In ARI the leading causes are largely lifestyle based in the form of alcohol excess and non-alcoholic fatty liver disease, caused by obesity. Alcoholism and obesity are not large problems in Ethiopia due to lower disposable income, healthier diet and 80% of the population being involved in manual agricultural jobs. Whereas in Scotland, 65% of the adult population are overweight and 29% are obese. 71.2% of Ethiopians abstain from alcohol completely [3] in contrast to Scotland where the figure is only 16% and 1 in 15 deaths had alcohol as a factor [4]. By way of contrast, the vast majority of varices in FHRH are caused by infections.

Hepatitis B and C are much larger problems in Ethiopia than in the UK where there are targeted treatment and prevention schemes. A WHO report [5] stated that Ethiopia had no national strategy for the surveillance, prevention and control of viral hepatitis.

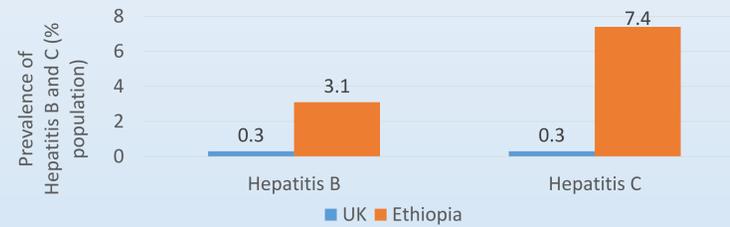


Figure 3: Prevalence of Hepatitis B and C in the UK and Ethiopia [6] [7]

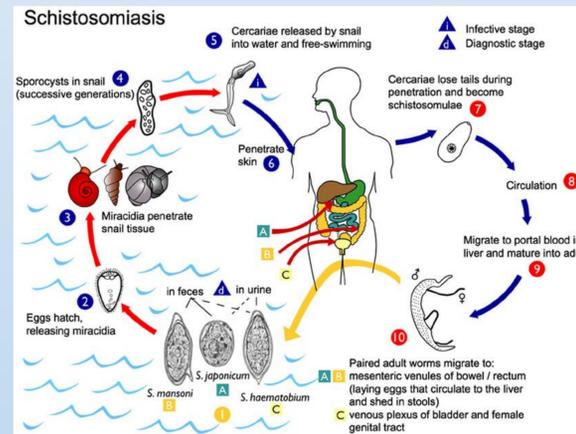


Figure 4: Lifecycle of Schistosomiasis [8]

The reason for the differences in Schistosomiasis prevalence is that Bahir Dar is located on a huge freshwater lake, Lake Tana, that is infested with schistosomiasis. Whereas the parasite does not exist in the UK. These differences in the causes of varices highlight how preventative measures that are relevant to developed countries are not necessarily transferrable to developing nations.

## Management of Varices

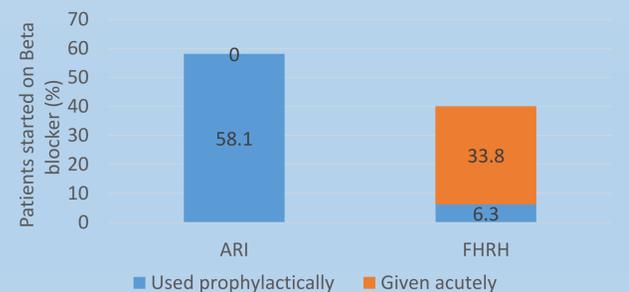


Figure 5: Percentage of patients given a beta blocker acutely or prophylactically in ARI and FHRH

In addition to the lower rates of beta blocker prescribing in FHRH, the majority of those that were prescribed were given when the patient first presented. This represents a misinterpretation of guidelines. Beta blockers are indicated for prophylaxis of varices and should not be given acutely due to the risk of blunting the bodies physiological response to blood loss.

Treatment	FHRH	ARI	p
Antibiotic therapy	48 (72.7)	106 (82.1)	NS
Terlipressin	0 (0)	94 (79)	<0.00001
Blood Transfusion	55 (83.3)	49 (38)	<0.00001
Banding	21 (31.8)	91 (70.5)	<0.00001
Rebleeding within 2 years	8 (14)	40 (36.7)	<0.01
Mortality*	9 (13.6)	22 (17)	NS

Table 1 – Number of patients in FHRH and ARI groups receiving stated treatments, rebleeding and mortality. (Percentage of total). \*Figures for mortality for FHRH were hospital mortality whereas for ARI it is 6 week mortality.

The significant differences in management between the two centres largely comes down to resource limitations at FHRH. ARI's data is in line with other centres in developed countries. Some reasons for these differences are outlined below:

- There is no terlipressin available at FHRH.
- Patients generally present later due to rural populations which partially explains the higher blood transfusion rates, along with the poorer banding rates.
- FHRH has only 1 endoscopy suite with 2 trained clinicians, hence limiting the number of varices that can be endoscopically banded.
- Rebleeding and mortality rates are likely not accurate at FHRH as they have no record of mortality or rebleeding out with hospital stays.



Figure 6 and 7: Ward in ARI (left) and ward in FHRH (right)

## Conclusion

In conclusion, varices presenting to ARI and FHRH have very different underlying aetiologies. Hence strategies aimed at prevention would need to differ. In ARI the focus would be on lifestyle modifications whereas in the FHRH patient group, controlling infection would form the focus.

Whilst prevention requires a public health strategy, management of presenting patients can be modified at a hospital level. Guidelines for managing varices are being closely followed at ARI, however FHRH is falling short of guidelines. This is due to:

- Lack of facilities and access to medications
- Lack of funding
- Lack of trained staff

As a result of this, it is likely that mortality and re-bleeding rates in FHRH are much higher than this data suggests. There is an ongoing knowledge exchange between the University of Aberdeen and Bahir Dar University which hopes to improve access to appropriate educational and training resources to reduce the variability between the two centres.

## Presenter Declarations

This presenter has the following declarations of relationship with industry:  
Educational grants - Travel grant



## References

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