AKUAANA Outreach Initiative

Progress Report, August 2016 – August 2017

Project Title: Treatment of Anaemia in Pregnancy

Sample size: 2,000 pregnant women

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Introduction and Rationale

Iron deficiency and anaemia in pregnancy are known risk factors for pre-term deliveries, causing low birth weight, as well as leading to poor neonatal and maternal health outcomes.

In Ibrahim Hyderi, about half of the women enter their pregnancy being considerably iron deficient and anaemic (unpublished data from AMANHI cohort study). Untreated, a pregnant woman is not only at risk for a poor outcome of the index pregnancy, but is also likely to enter her subsequent pregnancy in an iron deficient state with equally disastrous complications. In the fetus, poor iron stores manifest as anaemia in early infancy with effects on infant growth and neurodevelopment. Therefore, it is immensely beneficial to give iron supplementation for the prevention of anaemia in all pregnant women, and it is crucial to treat women immediately if they have anaemia.

In 2016, the Aga Khan University Alumni Association of North America (AKUAANA) and the Department of Paediatrics at the Aga Khan University (AKU) commenced a partnership to tackle this issue, by targeting up to 2,000 pregnant women to be screened and treated for anaemia each year. Their funding, covered the project cost - US$17,000 per year, and supported AKU's goal to reduce infant mortality and perinatal morbidity in Ibrahim Hyderi.

Study Objective

To identify pregnant women with anaemia using point of care testing, and to appropriately treat them with oral iron supplementation, Venofer injections and blood transfusions.

Methods

The project site is an impoverished urban slum, Ibrahim Hyderi in coastal Karachi, with an approximate pregnancy rate of 2,000 per year. In this project, married women of reproductive age are identified for pregnancy, and the women who are pregnant, are screened for anaemia

using a point of care, Hemacue machine. Community health workers were already trained by the Pediatric Nutritional Research Laboratory (NRL) for the use of the Hemaccue machine, prior to this study.

Anaemia is classified based on the haemoglobin levels below:

No Anaemia - 10 gm/dl
Mild Anaemia - 8.6-10 gm/dl
Moderate Anaemia - 7- 8.5 gm/dl
Severe - 7 gm/dl

All identified pregnant women were given oral iron supplements, and treatment was provided based on their level of anaemia in line with these guidelines:

No or mild anaemia - Dietary advice and oral iron supplement provided at home or at the primary healthcare centre.

Moderate anaemia **-** Patients were referred to a tertiary level Sindh Government Hospital by community health workers, to have their first dose of injectable Iron known as Venofer. All medical supplies and drugs were provided by the project. After the first dose under medical supervision, subsequent doses were given at the primary healthcare centre.

Severe Anaemia – Patients with severe anaemia were referred to either Jinnah Postgraduate Medical Center (JPMC) or Sindh Government Hospital (SGH) for blood transfusion.

Study Progress (52 weeks)

From August 2016 to August 2017, 2,439 households were visited and 2,000 pregnant women were screened for anaemia. Of the 439 that were not screened, the reasons are given in table 1. Out of the 2,000 screened pregnant women, 1,096 (54.8%) did not have anaemia, 558 (27.9%) had mild anaemia, 275 (13.8%) had moderate anaemia and 71 (3.5%) pregnant women had severe anaemia (Table 2). Out of 2,000 pregnant women screened for this project, 161 women were screened in their first trimester, 1,163 were screened in their second trimester, and 676 were screened in their third trimester (Table 3).

Oral iron therapy was given to all the screened pregnant women. Overall, 275 women required Venofer infusion and 71 women required blood transfusion. The Venofer injection infusion was given to 170 pregnant women with moderate anaemia, and 52 pregnant women with severe anaemia (table 4). Blood transfusion was recommended to all women with severe anaemia, but only four women got transfused at a public sector tertiary care hospital

Reasons for refusal for intravenous therapy in women with moderate and severe anaemia are described in Table 5.

Project completion

We have screened and treated 2,000 pregnant women in one year.

Tables

Table 1: Reasons Not Screened	No.	%
Husband / family refused	89	20.3%
Private Treatment	49	11.2%
Religious issue	8	1.8%
Shifted	46	10.5%
Delivered	158	36%
Miscarriage	48	10.9%
Not at home (went to mother's home for delivery)	41	9.3%
Total	439	100%

Table 2: Severity of Anaemia	No.	%
No Anaemia	1,096	54.8%
Mild Anaemia	558	27.9%
Moderate Anaemia	275	13.8%
Severe Anaemia	71	3.5%

Table 3: Distribution of Anaemia by trimester								
1st Trimester (n=161)			2nd Trimester (n=1163)			3rd Trimester (n=676)		
Mild	Moderate	Severe	Mild	Moderate	Severe	Mild	Moderate	Severe
35 (22%)	5 (3%)	2 (1%)	331 (28%)	148 (13%)	39 (3%)	192 (28%)	122 (18%)	30 (4%)

Table 4: Treatment	No.	%
Oral iron therapy	2,000/2,000	100
Inj. Venofer in moderate anaemia	170/275	62
Ini Venofer in severe anaemia	52/71	73
Blood Transfusion	4/71	5.6

Table 5: Venofer refused/not received	Number	%
H/O reaction to venofer	34	28.3%
Delivered before infusion	17	14.2%
Religious issues	9	7.5%
Went to mother's house for delivery	16	13.3%
Family refused	43	35.8%
Referred to JPMC	1	0.8%
Total cases	120	100%