

PRENATALLY DIAGNOSED APPARENTLY ISOLATED SEVERE VENTRICULOMEGALY-HOW TO COUNSEL THE PROSPECTIVE PARENTS?

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OBJECTIVES AND RATIONALE

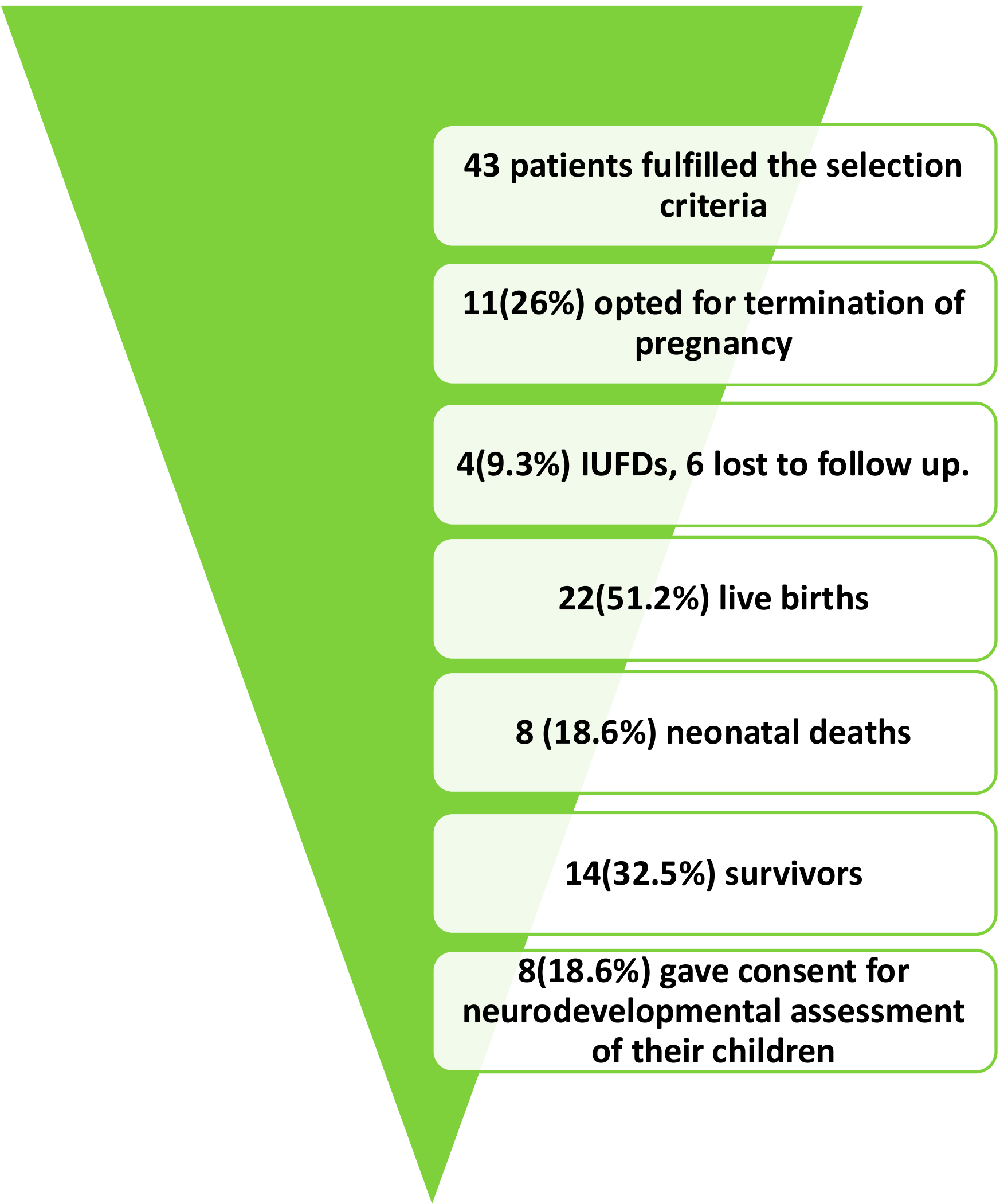
To assess the long-term neurodevelopmental outcomes of the survivors of severe apparently isolated ventriculomegaly diagnosed prenatally using a validated Psychometric scale to help the parents-to-be better understand the prognosis.

In countries like India, there is a legally permissible limit of the gestational age for allowing termination of pregnancy. Some cases of severe ventriculomegaly present very late in gestation and therefore it is necessary to counsel the parents beforehand in an objective manner.

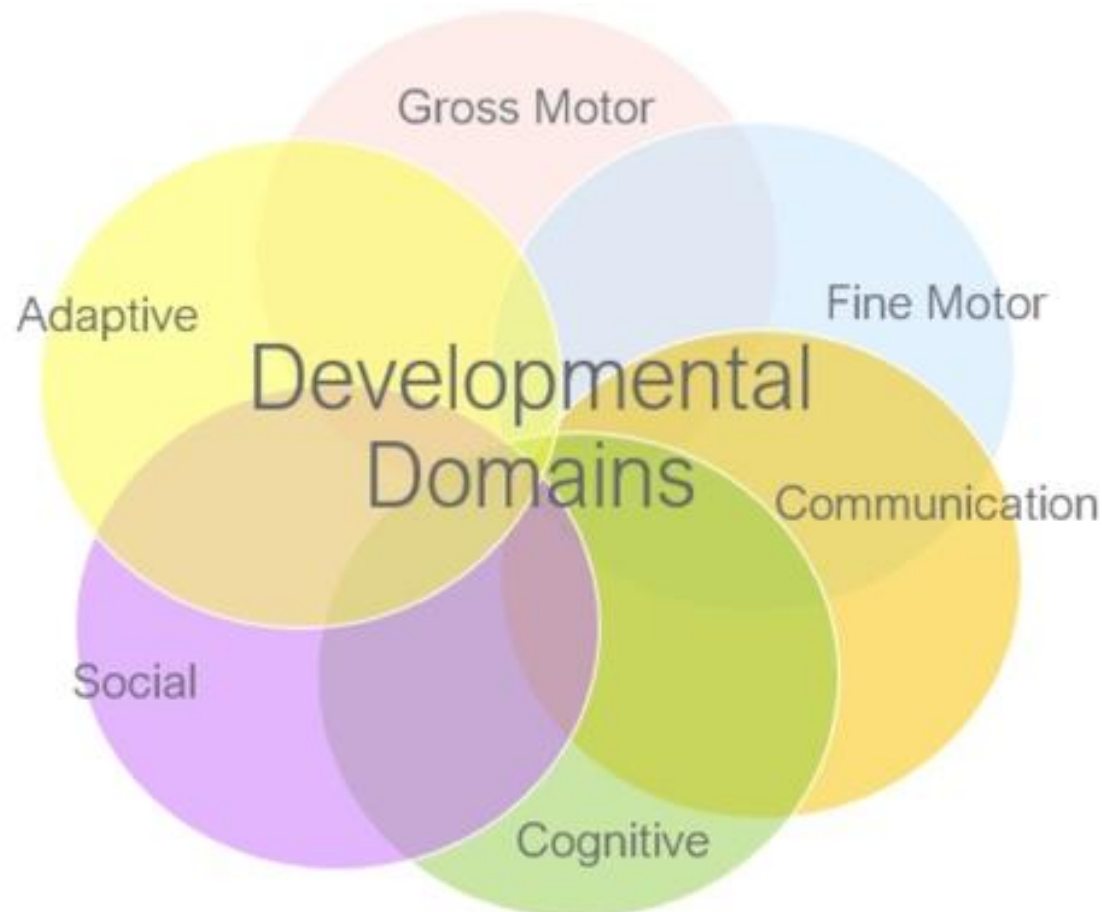
METHODOLOGY

Study design- Prospective analysis of retrospectively collected data
Inclusion criteria- All the cases of severe ventriculomegaly from 2011 to 2021 recorded on Astraia database. Severe ventriculomegaly was defined as diameter of atria of one or both lateral ventricles more than 15mm. (ultrasound examinations carried out by FMF- UK certified operators.)
Exclusion criteria- multiple pregnancies , pregnancies with additional brain abnormalities or extracranial abnormalities at presentation.
Maternal TORCH screening, invasive testing and fetal MRI were offered to all. Infections and chromosomal abnormalities were ruled out in all.

SERIAL NUMBER	GESTATIONAL AGE AT PRESENTATION	SIZE OF VENTRICLE IN MILLIMETERS	LATERALITY	HEAD CIRCUMFERENCE IN CENTILES, MORE THAN 95 TH	MRI FINDINGS- PRENATAL,POSTNATAL
1	37 WEEKS 2 DAYS	16.4	UNILATERAL	NO	NOT DONE
2	37 WEEKS 5 DAYS	15.4	UNILATERAL	NO	NOT DONE
3	30 WEEKS 4 DAYS	22	BILATERAL	NO	ISOLATED SEVERE BILATERAL VENTRICULOMEGALY
4	33 WEEKS 6 DAYS	31.5	BILATERAL	NO	ISOLATED BILATERAL SEVERE VENTRICULOMEGALY
5	36 WEEKS 3 DAYS	18.7	UNILATERAL	NO	NOT DONE
6	31 WEEKS	22	BILATERAL	NO	POST-ISCHAEMIC GERMINOLYTH, BILATERAL VENTRICULOMEGALY
7	32 WEEKS 3 DAYS	19	UNILATERAL	NO	UNILATERAL, RIGHT-SIDED VENTRICULOMEGALY WITH HEMOSIDERIN STAINING OF LATERAL EPENDYMAL SURFACE
8	36 WEEKS 3 DAYS	33	BILATERAL	YES	POSTNATAL MRI SHOWING AQUEDUCTAL STENOSIS, HYDROCEPHALUS



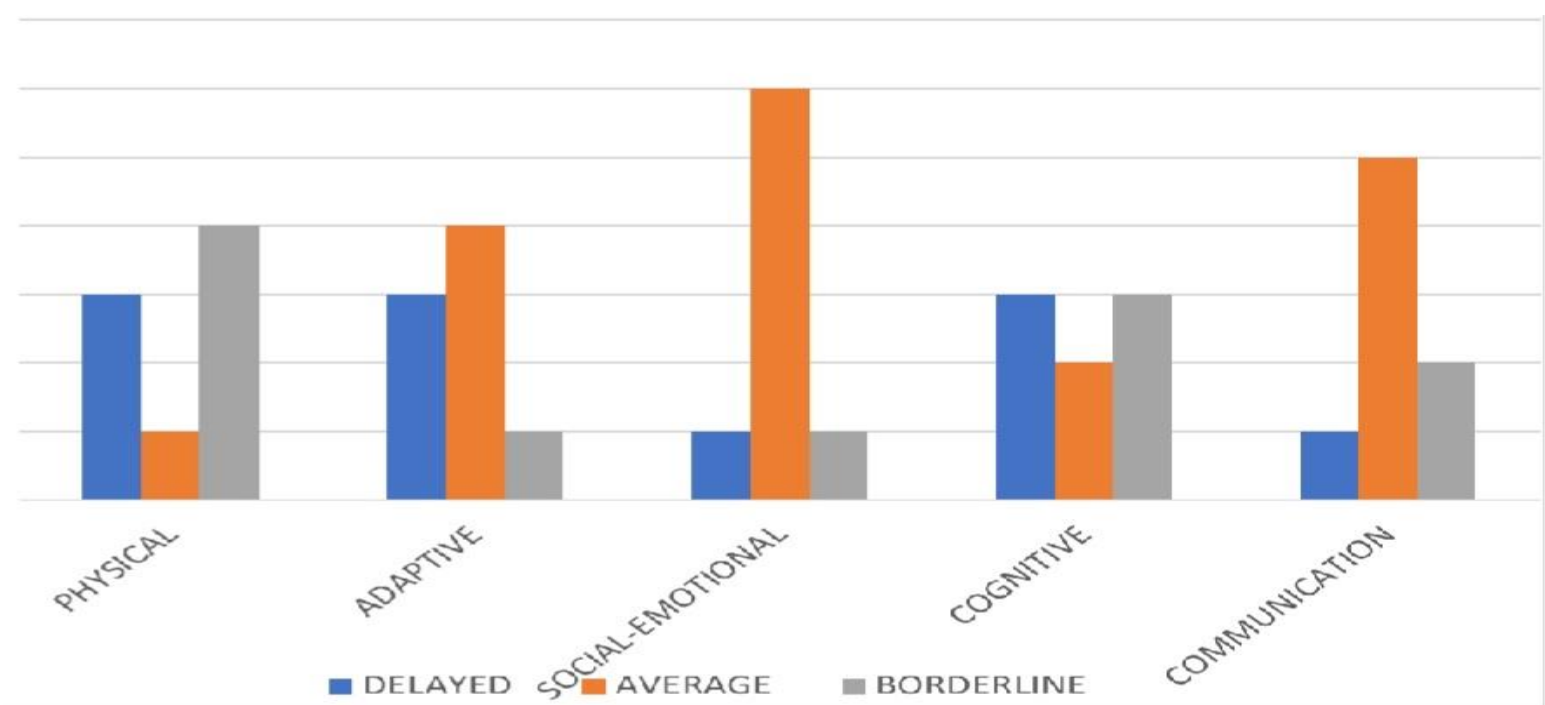
The assessment was done by clinical psychologist using Developmental Profile 3 over video calls and at clinic as per couple’s convenience. An age-specific questionnaire was used for each child and total raw scores were converted manually into standard scores and Domain Quotient (DQ) was calculated for each domain and General development Scores (GDS) were computed based on normative conversion tables.



RESULTS

SERIAL NUMBER	PHYSICAL	ADAPTIVE	SOCIAL-EMOTIONAL	COGNITIVE	COMMUNICATION	OVERALL DQ
1.	MILD DELAY	MODERATE DELAY	AVERAGE	AVERAGE	AVERAGE	BORDERLINE
2.	BORDERLINE	AVERAGE	AVERAGE	BORDERLINE	AVERAGE	BORDERLINE
3.	BORDERLINE	AVERAGE	AVERAGE	BORDERLINE	AVERAGE	BORDERLINE
4.	MILD DELAY	MILD DELAY	AVERAGE	MILD DELAY	AVERAGE	BORDERLINE
5.	AVERAGE	AVERAGE	AVERAGE	AVERAGE	AVERAGE	AVERAGE
6.	MODERATE TO SEVERE DELAY	MODERATE TO SEVERE DELAY	MODERATE TO SEVERE DELAY	MODERATE TO SEVERE DELAY	MODERATE TO SEVERE DELAY	DELAYED
7.	BORDERLINE	BORDERLINE	BORDERLINE	MODERATE DELAY	BORDERLINE	BORDERLINE
8.	BORDERLINE	AVERAGE	AVERAGE	BORDERLINE	BORDERLINE	BORDERLINE

- The scores were worst on the physical domain, followed by the cognitive domain.
- 6 (75%) of the children had borderline DQ scores, 1 had average score and 1 had severe delay, affecting all domains.
- Surprisingly, only 2 of the mothers had stated concerns regarding the development of their children, and only one child was receiving therapy at the time of interview.



DISCUSSION AND CONCLUSIONS

- The existing evidence on outcomes of severe isolated ventriculomegaly is sparse but literature mostly warrants poor outcomes(1). In our study we tried to quantify the extent and scores were mostly in the borderline range.
- Most of the parents were seemingly unaware of the problems and had never reached out to healthcare professionals for help.
- In India, because of the social stigma associated with intellectual or motor disabilities, people are often reluctant to seek help.
- Early initiation of therapy can positively modify the long-term outcomes (2).
- So, it is necessary to counsel the parents that motor and cognitive domains are likely to be adversely affected. Though mostly the scores are in the borderline range, all such prospective parents should be sensitized at presentation about the benefits of early onset of interventions.

LIMITATIONS

- Small sample size.
- MRIs were declined by some, so underlying cause was not identifiable in all cases.

REFERENCES

1.Severe apparently isolated fetal ventriculomegaly and neurodevelopmental outcome
[Mathilde Letouzey](#), [Alexandra Chadie](#), [Marie Brasseur-Daudruy](#), [François Proust](#), [Eric Verspyck](#), [Pascal Boileau](#), [Stéphane Marret](#)

2.Early intervention in neurodevelopmental disorders: underlying neural mechanisms
[Giovanni Cioni](#), [Emanuela Inguaggiato](#), [Giuseppina Sgandurra](#) <https://doi.org/10.1111/dmcn.13050>